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Embodied Rhetoric

Memory and Delivery in Networked Writing

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Memory and Delivery in Networked Writing

by

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This project is dedicated to Amy,

without whom it would have been impossible.

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Embodied Rhetoric

Memory and Delivery in Networked Writing

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The University of Texas at Austin, 2010

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Whereas the traditional rhetorical practices of memory and delivery were directly connected to the body of the speaker, I argue that when communication is embodied on digital networks, the processes underlying memory and delivery—the coordination of individual and text and the use of embodied affordances to present a text, respectively—are expressed in different ways. Resonance, or the act of bringing two structures into coordination with each other, and switching, or the act of making connections between two networks, fulfill the role of memory in digital networks, coordinating the actions of different networks. Similarly, the protocol, or the technical and cultural rules of networks, and the program, or the emergent behavior, of a network must be taken into account by writers who wish to achieve rhetorical ends. Using three case studies of network formation on the microblogging service Twitter, I show how the acts of resonance and switching, along with the protocol and program of these networks, influence network formation, the types of communication generated by networks, and how those networks are received by outsiders.

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Chapter 1

Introduction

Consider the following messages, captured from the social networking site Twitter between 1:54 and 2:17 p.m. EST on July 8, 2008:

Table 1.1: Twitter Messages

Username	**Message**	**Time**
johnculberson	I just learned the Dems are trying to censor Congressmen's ability to use Twitter Qik YouTube Utterz etc - outrageous and I will fight them	1:54 PM
mattress	@johnculberson must mean you're having quite an effect, keep it up!	1:57 PM
tigerbeat	@johnculberson How are they trying to censor you & which dem is doing it? I'm sure the netroots on both sides would respond w/alls, email	1:58 PM
RobertFischer	@johnculberson Got cite?	1:59 PM
pgreenbe	@johnculberson who is? Is it legislative?	1:59 PM
MarilynM	@johnculberson - what?! can you link to something that tells us that (re censorship)?	1:59 PM
pauley	@johnculberson did they give some reason why? I thought the D's were "party of the people," why cut off lines of contact to connected youth?	2:00 PM
epodcaster	@johnculberson: Are they kidding?! Please! If we want to see what's going on we can always look at CSpan. However I like your personal touch	2:00 PM
MichaelBayer	@johnculberson Who's sponsoring the censorship effort?	2:01 PM
CherylSmith999	@johnculberson @craignewmark what's up with this censoring of congress? Seems to me as long as info isn't confidential new media is good.	2:03 PM
josephrodgers	@johnculberson More regulation! No transparency! Tax tweets!	2:04 PM
georgedonnelly	@johnculberson link to that on censoring? I wish more elected office holders would use social media.	2:05 PM
henrim	@johnculberson are they trying to ban its use on the floor or just in general?	2:06 PM
Stranahan	@johnculberson What are the specifics on this?	2:06 PM

agfhome	@johnculberson what's going on? I am ready to get this story out immediately.	2:06 PM
technosailor	@johnculberson heard a teaser for WBAL Ch 11 in Baltimore doing an "iTeam Reports" segment related to this. @timryan will fight w/you!	2:07 PM
TranqJones	@johnculberson Censorship in any form is unconstitutional. Transparency in our govt. is not a matter of national security. GO CONGRESSMAN!	2:08 PM
maslowbeer	@johnculberson can you substantiate that claim? Where did you hear this?	2:09 PM
batterista	@johnculberson Fight!!! Lots of bloggers and reporters here that I'm sure will help blow up the awareness on this issue!	2:10 PM
Matik72	@johnculberson Keep up the good fight John. Is there anything that we can do to help ie. fax "xyz person"?	2:14 PM
farrelley	@johnculberson That's crazy! What Dems are they? Must be scared about something. But if they were censored they would go nuts!	2:15 PM
alexalbrinck	@johnculberson What's the rationale?	2:17 PM
davidr	maslowbeer thanks for calling @johnculberson on it. every message from him is about those dirty dems. not what i want from any MOC.	2:17 PM

The messages in Table 1.1 are all responses to the first message in the list, which was authored by a sitting member of the U.S. House of Representatives, John Culberson of Texas. In that message, or tweet, Culberson claimed that a pending rule change in the House would restrict Congresspersons like himself from using Twitter and other forms of social media. This message prompted a large number of replies over the next two weeks, of which these are a brief selection. The replies, in conversation with the original message and each other, covered a range of responses, from support for Culberson to requests for more information, from jokes to specific critiques of Culberson and his choice of language, as well as a debate over the role of technologies like Twitter being used by elected representatives like Congressman Culberson and the nature of

representative governance in the age of the Internet.

A conversational exchange like the one above is not itself unique—except, perhaps, for the large number of individual participants: over the following two weeks, Culberson's tweet prompted thousands of responses sent by hundreds of unique users—yet the ease with which computers are able to organize asynchronous communication like this one has made these often ephemeral discussions more prominent. The primary technology that enables services like Twitter is computer networking. While computer networking has been with us in various forms for decades, the increasing use of laptops and other portable computers, along with ultraportable devices like cellphones and networked enabled music devices, has moved this networking into what Greenfield (2006) calls "everyware," an always on, seemingly ubiquitous network of connectivity.

As this always on connectivity becomes more entrenched in highly technological cultures, it is becoming increasingly apparent that, while computer and cellphone networks, to take two examples, have many technical differences, what they have in common is that they are part of the technological layer that supports a cultural structure that extends across different technologies and devices. I am calling this structure the digital network, and I argue that it is the platform for the increasingly ubiquitous communication behaviors that characterize the digital age. Of course, the seams of digital networks frequently make themselves known. When a cellphone signal is dropped or when a computer's hard drive crashes, we realize how fragile digital networking can be. However, the expectation of robustness in these networks, and our frequent dismay when they fail to meet this expectation, serves to demonstrate the extent to which digital

networks, and the communication practices they enable, have become a culturally expected norm, at least in those parts of the world that have access to these networks in the first place.

For rhetoricians and communication theorists, digital networks have become a fertile new site of investigation into people's communication practices. The focus of this dissertation is on the connections between digital networking and rhetorical practice, particularly the ways in which rhetoricians view memory and delivery, two parts of the five-part rhetorical canon. In the following pages I will argue that memory and delivery were traditionally concerned with the physical constraints of the speaker's body and how those constraints should be addressed by—and used to the advantage of—speakers as they perform a speech. While the specific, historical interests of memory and delivery, such as how the body and voice should be marshaled in rhetorical practice, remain pertinent to oral performance, these interests were reflections of a broader concern with the physical constraints of a communication medium and the effects of those constraints on communication in that medium. This being the case, rhetorical theorists interested in memory and delivery should turn their attention to the constraints, not just of the human body, but also of the digital networks on which modern communication practices are increasingly dependent. Deprived of the cues and signals of physical bodies, messages take on another body, that of the digital network. Like the physical body, digital networks have constraints and technical features that influence the kinds of messages that can be transmitted on them. And like classical rhetoricians, current practitioners must examine these networks for clues as to how they influence communication, using this information

to craft a rhetorical theory of memory and delivery on digital networks.

Fortunately, this work does not begin from scratch. What we now refer to as networks—the complex web of relations between various entities, whether people or societal structures, or features of the physical environment—have always existed, and they have long been subjects of analytical interest to scholars. As the processing power of computers has grown, it has altered the way in that these networks behave, bringing forward features that were latent in them or surfacing features that had previously been unknown (Castells, 2000a). In this work, I will apply the insights of network scholars to the communication practices of the users of digital networks with the goal of exploring how the rhetorical concerns of memory and delivery can be addressed in digital networking.

Forms of Analysis

Before attempting this investigation, it's necessary for us to determine the benefits of this analytical approach to digital networking. Returning to the Culberson example above, the linear presentation of the messages in Table 1.1 can make them seem quite conventional. Of course, in a way they are quite conventional, taking a form that is familiar to everyone: the conversation. More technically, rhetorical scholars might be inclined to categorize them as a form of dialectic, in which questions and answers are used to find the truth (although some might dispute this characterization). But this presentation, which is necessary to reproduce the messages in print, oversimplifies the nature of this discourse and the way it is encountered by Twitter users. For example, it is possible that no Twitter users, including Culberson's followers—a "follower" on Twitter

is a user who subscribes to another user's account, thereby receiving all their tweets—or even Culberson himself, saw all of these messages together at the time of the incident. This is partly because of the construction of the service at the time. In the summer of 2008, Twitter only displayed the replies of users who placed the *@username*, or "@reply" at the beginning of the message, as in "@johnculberson what's going on?…" Messages that placed the *@username* anywhere else in the message—as with "maslowbeer thanks for calling @johnculberson on it…"—were not shown on the replies page of the user being referenced. While some third party Twitter applications collated these different methods of using @replies, not all did, making it necessary for users to search for a particular username if they wished to see all tweets referencing that user. The presentation above also alters the way users access Twitter in another way: it combines Culberson's original message with the messages of his followers, in a way that no user would have seen them, unless he or she had searched for all these terms together. Additionally, but not trivially, users would only have encountered these messages in reverse-chronological order, rather than in chronological order, with the most recent message appearing at the top of their screens.

As a conventional form of discourse, there are three forms of analysis that rhetorical scholars might use to investigate this exchange: rhetorical analysis, media-specific analysis, and interface analysis.

Rhetorical Analysis

As more information about the rule in question came to light, many of Culberson's followers began to critique his original claim. Some of the congressman's

respondents probed him for further evidence to support his claim. In investigating his choice of language, one of these followers created a brief form of rhetorical analysis of the congressman's claim that went beyond mere argumentative logic to critique the appropriateness of his language for a particular audience, stating "every message from [Culberson] is about those dirty dems. not [sic] what i [sic] want from any MOC." One could easily imagine an expansion of this form of critique, where a scholar would investigate the entire corpus of these messages, scrutinizing the argumentative claims and the relation of those claims to evidence along with the other rhetorical features of the discourse. However useful an analysis using these various techniques would be—and I don't wish to dispute the usefulness of such a method—it would likely be only a partial means of investigating this discourse because such analyses tend to ignore the unique features of discourse of this kind, namely the digital network on which it was created.

Media-Specific Analysis

One response to the need to address the medium of a message is media-specific analysis. As communication practices have expanded beyond the familiar form of print, scholars have developed analytical frameworks for dealing with textual artifacts like those produced by Twitter. While the analysis of individual texts will always be useful, there is an ever-growing body of scholarship that combines textual analysis with investigations of the various media in which those texts are instantiated. While there are many examples of such scholarship, one of the more prominent ones can be found in the work of Hayles. In *Writing Machines* (2002), Hayles's project is to account for the effects of media—"the material apparatus producing the literary work as physical artifact"—in

the production of literary texts (2002, p. 29). Hayles calls this "media-specific analysis" (MSA), pointing out that because of the long dominance of print, "literary criticism and theory are shot through with unrecognized assumptions specific to" the print medium, assumptions that may not hold for other media (2002, pp. 29–30). In contrast, MSA seeks to account for the appearance of texts in different media, taking as a cardinal truth that "texts must always be embodied to exist in the world" (p. 31) and that this embodiment has real effects on how those texts are created and read. According to Hayles, MSA focuses on individual texts and their specific instantiation in a particular media (pp. 29–31), examining the effects of these media on the text. Returning again to the Twitter messages in Table 1.1, my discussion of these messages has outlined, if only briefly, the variety of the individual messages in the Twitter exchange and how they are presented to other Twitter users. If a scholar were to undertake a media-specific analysis of these Twitter messages, this analysis would look not just at the texts of the messages, but also at the different media in which Twitter users encountered those messages.

As I mentioned previously, Twitter operates via a web interface, but users can also access the service via third party applications that allow users to post messages to the service as well as view the messages others have posted. Due to the flexibility of this system, users can access Twitter not only via the Internet, but also via desktop applications, web-enabled smart phones, and any portable phone that can send and receive text messages. At the time when these messages were sent, the Twitter platform had yet to standardize the way in which replies were sent through the system, nor had it provided a standard method of "retweeting," a common practice in which a user would

repost a message sent by some other user, typically with the prefix "RT" and the original sender's username (ex. "RT @johnmjones…"). In short, these messages provide fertile ground for investigating the effects of various media on the text of this discourse.

However, in investigating the dialogic nature of these messages, MSA reveals its roots in literary theory. As Hayles describes it, MSA is almost completely a means of close reading, a method that is frequently unconcerned with authorship or how the text is created, focusing instead on the text itself, adding, in the case of MSA, an analysis of the effect of the medium *on the text*. Such an exclusion is out of place in the examination of this text, for one of its key features is the dialogic nature of message and response that characterizes the discourse. For example, the popularity of mobile interfaces for Twitter is most likely the reason for the non-standard punctuation and spelling that is common in tweets. Another source of these issues is the limitation of all Twitter messages to 140 characters, a restriction that allows Twitter messages to be transmitted in whole through text-message (short messaging service, or SMS) systems. The literary roots of MSA present another challenge to investigating this text, namely, how would a technique—close reading—designed to unearth the subtleties and aesthetic qualities of literary texts be applied to a text that appears to be, both as a whole and in its constituent parts, so haphazardly constructed and devoid of aesthetic qualities or deeper meanings? While MSA would not be inappropriate for the growing number of literary-quality texts appearing on Twitter and services like it and even though it sheds an important light on the various media involved in the Twitter ecosystem, it seems, in general to be inadequate for this particular example.

Interface

MSA can be an important part of understanding rhetorical practices, in that it calls our attention to the effects of particular media on specific texts. However, Brooke (2009) has argued that the focus on specific texts that rhetoricians have inherited from literary studies is inadequate to investigating the rhetorical effects of new media communication. According to Brooke, rhetoricians' "unit of analysis must shift from textual objects to medial [sic] interfaces," for the former position grounds itself in "individual texts…and large theoretical structures," leaving an "excluded middle" where "interfaces as rhetorical practices…may span multiple texts without achieving the level of abstraction of literary theory" (pp. xvi–xvii). In other words, by focusing exclusively on textual products and the broad theorizing that can be made from such texts, Brooke believes that rhetorical scholars ignore the "interfaces" that exist between these two poles of scholarship. On the one hand, examining individual texts ignores these interfaces, and on the other hand, the vast array of interfaces for accessing digital texts, as well as their ability to move, change, and even disappear, make it much more difficult for individual readers to create shared experiences around these texts, which, in turn, makes broad theorization much more difficult (Brooke, pp. 6, 11). While it is important for rhetorical researchers to focus on individual texts, the analysis of individual texts is incomplete if it is not accompanied by an analysis of the material technologies in which the text is instantiated. As Brooke points out, many texts are frequently accessed in multiple ways via multiple technologies, and our analysis must specifically deal with these multiple interfaces. Making such an account of rhetorical texts requires us to investigate not just texts and composition or

reading technologies, but also the networks on which texts increasingly reside, providing the backbone for their distribution and consumption. Examining the networks in which texts exist makes it possible to include analyses of the technical features of communication networks as well as predictions about the use of those technologies in future communication.

To sum up, texts like that in Table 1.1 present unique challenges to new media and rhetorical theorists, challenges that can't be completely addressed through either close reading (in its various forms) or broad theory alone. Brooke (2009) suggests that the ignored middle space here is the interface. However the interface, as Brooke describes it, remains a broad concept. While he makes a point of noting that the interface is not everything "outside" the text (p. 25), Brooke's argument makes a case for exploring the middle between texts and theory, but leaves part of that middle unexplored: digital networking.

It is not the goal of this project to account for all of the physical features affecting the authors of the messages in these exchanges. Not only is information about the devices and interfaces they used to read and post messages to Twitter not available in the data sets I have used in this study, such an accounting for hundreds of unique users, each potentially using multiple interfaces, would be nearly impossible. Rather, my focus will be on the constraints on users' communication that stem from digital networking. While what we now call networks have been the subjects of scholarly interest for some time, the effects of networking in digital environments on writing and communication have not been adequately explored in the fields of rhetorical or new media studies. Similarly, the

role that social structures play in writing and the reception of texts has been well explored (Darnton, 1995, 2002; Eisenstein, 1979; Johns, 1998); however, only recently have digital networks themselves become the subject of detailed critical analysis (Castells, 2000b, 2001, 2009; Galloway & Thacker, 2007). Even though networks themselves are not new structures, the flexibility and modularity of digital networks have given the network structure a new power in the connected world. It is my goal to investigate the writing that occurs on digital networks through the lens of rhetorical theory, and my focus will be on the constraints of these networks on communication.

Networks and Embodiment

The question remains as to why digital networks, by which I mean networks run on digital communication technology, matter to writing and rhetoric researchers, or, for that matter, to media theorists. The analysis techniques I have outlined above have served researchers in the analysis of language for many years, and, while I have pointed out some problems posed by the messages in Table 1.1, serviceable analyses of that data could be prepared using these methods. As I have stated above, however, these analyses are lacking in that, like an analysis of an oral performance that ignored the speaker's physical performance, they ignore the networks that underlie and enable this discourse. Networks are fundamentally embodied structures whose effects on writing are dependent on the particular features of this embodiment. While rhetorical theory has not always used the term "embodiment" to describe the role of the body in communication, this theory, in the form of the rhetorical canon, has always provided a means for investigating embodiment. In the following section I will describe the role that embodiment plays in

the canon and suggest how certain parts of the canon can be useful tools for understanding communication on digital networks.

Rhetorical Canon

The rhetorical canon, which I will refer to simply as the canon, consisted of five parts: *invention*, *arrangement*, *style*, *memory*, and *delivery*. The parts of the canon have a long history, appearing in some of the earliest rhetorical writings. In *Against the Sophists*, Isocrates declares that the "tasks" of the rhetorician are to "to choose from these elements those which should be employed for each subject, to join them together, to arrange them properly, and also, not to miss what the occasion demands but appropriately to adorn the whole speech with striking thoughts and to clothe it in flowing and melodious phrase" (16). Without explicitly naming them, this passage refers to the processes of invention, arrangement, and style. Similarly, in *Antidosis*, Isocrates notes that a speaker should have

> a mind which is capable of finding out and learning the truth and of working hard and remembering what [the mind] learns, and also with a voice and a clarity of utterance which are able to captivate the audience, not only by what he says, but by the music of his words. (189–190)

Here, there are clear references to the practices associated with memory and delivery—the act of "remembering" what is learned and being able to "captivate the audience…by the music of…words." While Cicero attributes the five parts of the canon to Aristotle in *On Invention* (I.7), the Greek philosopher makes no specific mention of memory. However, his *Rhetoric* includes references to invention, arrangement, and style, as well as a brief mention of delivery. In short, from its earliest stages, the study of rhetoric has

concerned itself with the activities encompassed by the canon, and as the study of rhetoric matured the parts of the canon became one of the primary tools for rhetorical creation.

But it would seem that the parts of the canon were not all created equal; for example, Isocrates only addressed the first three, invention, arrangement, and style. Aristotle gives over the entire first two parts of his *On Rhetoric* to a discussion of invention, leaving arrangement and style to the third part, and only mentioning delivery in passing. Confirming what this emphasis on the first three parts of the canon would seem to suggest, Kennedy claims "invention, arrangement, and style are the three most important parts of classical rhetoric" for these parts of the canon were "applicable equally to public speaking and written composition" (Kennedy, 1994, p. 6). Kennedy's claim reveals two key assumptions about the canon: first, that it is, at least to some, a two-tiered system, with some parts receiving much more attention than others, and second that it is a canon uniquely tied to communication media.

I suggest here that these two assumptions, the two-tiered ranking of the parts of the canon, and the relationship between these parts and specific communication media, are intimately connected; to understand the one we must understand the other. The presumed superiority of invention, arrangement, and style—the higher canon—was a product of their immediate application to written discourse, the medium that grew to dominate learned communication by the Middle Ages. Memory and delivery, the lower canon considered essential to oral communication, suffered from this connection, and the types of practice they represented were considered less important to rhetoricians than

their counterparts.

The Canon and Writing

There are some practical reasons for the gradual devaluation of memory and delivery, first in written rhetorical treatises and then in the practice of writing from the Middle Ages through the Renaissance. In *On Rhetoric*, Aristotle mentions the importance of delivery, but has little to say about it, other than to compare it to the art of acting. In his history of classical rhetoric, Corbett (1990) suggests that memory was not much discussed in rhetorical texts because it was difficult to cover theoretically (that is, in the abstract), while delivery was given even less attention because it was best learned in person by watching others deliver and practicing one's own delivery. He notes, however, that both topics were thoroughly covered in schools of rhetoric (pp. 27–28). In other words, memory and delivery were both difficult to discuss theoretically and intimately connected to the physicality of oral performance.

Mind and body. The higher canon has traditionally been connected to the study of mind. The mind was considered superior to the body. As Corbett notes:

> the system of the topics is really *an outgrowth of the study of how the human mind thinks*. The human mind, of course, does think about particular things, but *its constant tendency is to rise above the particulars and to abstract, to generalize, to classify, to analyze, and to synthesize.* The topics represented the system that the classical rhetoricians built upon this tendency of the human mind. (1990, p. 95; my emphasis)

Here Corbett specifically connects the topics—a subject primarily associated in the

history of rhetoric with invention—to the processes of the mind and its ability to create abstractions, "to generalize, to classify, to analyze, and to synthesize." These are the processes that, at least initially, were applied to the higher canon, but not the specifically embodied processes of memory and delivery. The focus on the higher canon is such that even now in higher education, writing students are taught invention, arrangement, and style as tools for creating their papers and exams.

Contemporary moves to reconsider the lower canon have done so on the grounds of hybrid orality created by digital technologies (DeVoss & Porter, 2006; McCorkle, 2005; Ong, 1991; Porter, 2009; Smith, Pedersen, Pittman, & Walter, 2007; Van Ittersum, 2009), or the role of memory and delivery in digital communication and performance (Brooke, 2009; Haskins, 2007; Haynes, 2007; Ryan, 2004). While some of these revivals are predicated on the idea that memory and delivery represent much more than the mere recollection of a text or its physical presentation, they rarely question the idea that the lower canon was deprecated because of the relation of these features to oral performance. However, the connection of memory and delivery to embodiment must be noted as a major influence in our understanding of how the lower canon eventually took a lesser place compared to the higher canon. In other words, while a thorough investigation of the historical attitudes towards memory and delivery is not within the scope of this project, I do wish to point out that the lower canon was not only structurally dependent on oral performance, but also on embodiment.

Digital networks are fundamentally embodied structures, from the text that is transmitted via these networks, to the physical machines that house and transmit these

messages, the wires on which they travel, and the devices that are used to encode and access them. Like the body or any other medium, networks can be ignored to a certain extent, for when a network works best it is virtually transparent to its users. This practice of ignoring the medium is a key part of the process by which close reading and other strictly textual analyses operate. However, we mustn't assume that merely because a user of a network has become habituated to patterns of interaction with that network, such that he or she no longer consciously thinks of those habits, this means that the network fails to play a role in shaping the communication that travels on it. While digital communication technologies have done much to foster new forms of communication, they also preclude some forms of communication in that the embodiment of that communication isn't possible on a given network. No medieval teacher of rhetoric would have advised a student to emphasize a point in a speech by leaping fifty feet in the air because such a performance was physically impossible. Similarly, rhetorical performance on digital networks is determined by the embodiment of those networks and rhetorical practices intended for networked communication must be cognizant of the structure and restraints of that embodiment.

I do not wish to suggest that an investigation of the embodied structure of networks using delivery and memory should ignore the role of the physical body in communication. The body remains the fundamental structure by which human beings access the world and communicate with others. It is no stretch, however, to suggest that digital networks have modified and extended the body in ways that are important to how we view those networks in communication. Haraway (1991) and others have argued

persuasively that our technological society has supplanted the liberal humanist view of the self with a more fluid, continually upgradable entity she calls the cyborg, and that these cyborgs are not merely the result of the melding of technology with flesh. While the physical merging of technology and the body is a key part of the cyborg, also key are the communication structures that have allowed us to alter our conception of our selves, from the ease with which identities can be put on and taken off in our society to the extreme case of the Human Genome Project ("All About The Human Genome Project (HGP)," 2009) where we have literally written our bodies in text. The digital network is both another body and an extension of the human body. I do not wish to argue that investigations of the role of gender, sexuality, race, or any other embodied concept in rhetoric and communication should in any way be displaced by the study of digital networks. Instead, as a key locus of communication, the digital network is the site for a renewed emphasis on the ways in which memory and delivery are embodied in communication.

Digital Networks

Definition

By network, I refer to social structures—both social and physical—in which social actors and technologies are connected such that they are able to share information. Networks are distinct from hierarchies with rigid subordination structures in that power in a hierarchy is determined by position in the hierarchy. While certain individuals and structures within a network can have more power, access, or influence relative to others, and hierarchies can make use of networks in their management of power, the two are

distinct in that hierarchies depend on position for power, while networks do not. Rather, power in networks depends on connection. Castells argues that networks have always existed, but that they have traditionally been out-performed by hierarchies, which, due to their top-down authority structures, were better able to organize themselves around specific goals (2000a, p. 15). According to Castells, information technologies have largely overcome this problem, specifically by enabling networks to deal with the "co-ordination and management of complexity" (2000a, p. 15). However, he argues that the network society is not an inevitability but an accident of history resulting from the convergence of trends in politics, society, and technology (2004, pp. 14–15). These technologies are based on digital communication tools, such as desktop and portable computers, the mass media, the Internet, cell phone networks, and other devices that allow for the communication of information from one geographic space to another. It is these digital networks that I wish to study in this project.

Further, I wish to distinguish digital networks from other uses of "network" in scholarly literature. While digital networks have much in common with social networks and the science of graph theory, the characteristics of social networks and network graphs are not the focus of this study. Specifically, while digital networks often overlap with social networks, social networks are primarily defined by social relations: who someone knows and who knows them in return. Rather than being constituted by social ties, I maintain that digital networks are constituted by writing, both in spoken language, grapholects like English, and in the code and protocols that control the physical hardware on which digital networks are run. Digital networks are distinct from the networks of

graph theory in that while graph theory can describe the structure of these networks, it does not account for the distinguishing characteristic of these networks: writing, and the network effects that occur in writing on these networks.

Social Networks

In his *Social Network Analysis* (2000), John Scott outlines the history of network analysis, tracing its development from anthropologist Alfred Radcliffe-Brown's interest in social structures in the early twentieth century (p. 4ff.). Social network analysis has become a well-defined field in the social sciences. Recently, this form of analysis has made the natural move to investigating online social networks, what danah boyd (who purposefully writes her name in lower-case) and Nicole Ellison (2007) call "social network sites" or SNSs, using the term to distinguish between a specific type of computing platform and the more general activity of "social networking." boyd and Ellison maintain that this terminology is necessary because "social networking" typically refers to attempts to create social links with individuals that one does not know, while the social networks created by users of social network sites typically replicate that user's offline social network. They go on to describe SNSs as having three features: SNSs allow users to construct "a public or semi-public profile within a bounded system," create a list of "friends," and "view and traverse" their own and other's connections.

boyd and Ellison's definition has come under fire from Beer (2008) who claims it is too broad because these features are found on too many sites that would not generally be considered social networking platforms. Beer also takes issue with the decision of boyd and Ellison to treat online and offline social behaviors as somehow being distinct.

For example, Beer notes that boyd and Ellison distinguish online "Friends" from offline "friends" (p. 520), arguing instead that online and offline life exist in a recursive relationship, "where SNS come to challenge and possibly even mutate understandings of friendship" (p. 520). As these details suggest, the study of social networks and SNSs has as its primary focus the social relations created between users of social sites and the complicated interactions between the online and offline personas of individual users. Although Beer suggests that SNS researchers need to investigate the record left by SNS users, which he claims are "vast archives" of information about their habits (p. 522), the investigation he proposes would not be of the way in which communication affects and constitutes those networks, but rather of the intentions of users.

Graph Theory

Social network analysis does have one significant branch dedicated to the study of networks as networks. As other researchers built on Radcliffe-Brown's work in the study of social networks, they began to adopt mathematical techniques, particularly graph theory, in order to analyze the social structures they were investigating (Scott, 2000, pp. 33–34). For the analysis of networks consisting of "large sets of points with complex patterns of connection," graph theory provided a means of "manipulat[ing] very large graphs" by representing them in a "more abstract mathematical form" (Scott, 2000, p. 64). Using graph theory, social network researchers were able to quantify the networks in which social actors participated, define the structure of these networks, and use this information to compare and contrast multiple networks with each other.

The basic units of graph theory are the *node* and the *edge*, where a node

represents the fundamental element of the network—people, corporations, cars—and edges are the connections that exist between nodes (Galloway & Thacker, 2007, pp. 31–32). In some social graphs, these edges are directional, indicating that a connection doesn't necessarily exist in two directions. For example, I might subscribe to the mailing list of a politician but that politician receives no communication from me. Social graphs are described by their *order*, which refers to the number of nodes in the graph, and their *size*, which is the number of edges. Individual nodes have a *degree* describing the number of edges connected to that node. For example, a triangle-shaped graph of three nodes would have an order of 3 and a size of 3, while each node would have a degree of 2. Graphs can be roughly grouped into three types: *centralized*, where the majority of connections are made to a primary node; *decentralized*, where there is more than one center, but the majority of nodes still only have one connection to one of these hubs; and *distributed*, where there are no central hubs. In centralized and decentralized graphs the order and size are roughly equal. In distributed networks, the size greatly exceeds the order. Graph theory has proved to be a useful tool in the investigation of networks, allowing for a standard means of quantifying and comparing network structures. Although it is not a perfect tool, if it is used with qualification, it can help illuminate network features that would otherwise be difficult to assess.

Network Theory

While I will occasionally reference social networks and graph theory in investigating digital networks, I will rely more heavily on the work of network theorists, particularly Castells's work (Castells, 2000a, 2004, 2007) and Galloway and Thacker

(2007).

Castells. Castells has written extensively on networks in a wide-ranging series of works that outline the social changes that elevated networks over hierarchies as the fundamental structure of power in society, arguing that because of the role that networks play in the distribution of information, networks are the primary means of social transformation in the network society (2000a, p. 21). In his work, Castells has used the language of graph theory to describe the nature of networks but he has done so in a descriptive and less quantitative fashion than is common to graph theory. According to him, nodes are only as important as their ability to absorb and process information (2000a, pp. 15–16). Networks are programmed to serve particular goals, and once they are programmed, they cannot be reprogrammed. Rather, they must be destroyed by external forces and replaced with "alternative networks around alternative values" (2000a, p. 16). Thus, power in the network society rests in two skills: the ability to program/reprogram networks and the ability to establish relationships of cooperation between networks (2004, p. 32). Castells calls the first group *programmers* and the second *switchers*. While both programmers and switchers are social actors, neither one are necessarily individuals, and they "operate at the interface between various social actors, defined in terms of their position in the social structure, and in the organizational framework of society" (2004, p. 32). In other words, programmers and switchers act at the level of the network, defining the way in which the nodes of the network interact with each other. At this level, they serve as the means of coordination between these nodes. One way in which this coordination occurs is through networks sharing information with

each other, such as through direct transfers—sending messages, for example—about which I will have more to say later.

Castells maintains that power in a network society is held in the network itself, instead of single actors such as the state, because "the exercise of power in the network society requires a complex set of joint action that goes beyond alliances to become a new form of subject" (2004, p. 32). That is, the network wields power that is both more than the sum of its parts and independent of those parts. Castells identifies this new "subject" with Bruno Latour's (1993) "action-network actor," taking pains to clarify that he does not argue that networks wield this power in "abstract, unconscious" ways or like "automata" (2004, p. 32). Crucially, he argues that "power-holders are networks themselves," not individuals, and that counter-power movements exist according to the same logic as this power—the network (2004, pp. 32–34). Therefore, resistance to power as instantiated in networks either attempts to reprogram networks or block the switches connecting them to each other (2004, pp. 34–35).

At the structural level, Castells identifies hypertext as the universal language of networks, and he claims that outside of the hypertext there exist only "purely individual experiences" (2000a, p. 21). That is, if an experience cannot be expressed in hypertext, it is out of the reach of the network and irrelevant to it. Building on this idea, Castells maintains that networks are decentered and binary. In the first case, no one person or social structure controls a network, and, in the second case, either something is inside the network, or outside of it. As he puts it, "what is not in the network does not exist from the network's perspective, and thus must be either ignored (if it is not relevant to the

network's task), or eliminated (if it is competing in goals or in performance)" (2000a, p. 15). Because networks exist in this state of tunnel vision, a key skill for switchers is to align the goals of one network with another in such a way as to bring them into coordination, rather than have them ignore each other or enter into a state of destructive competition.

To sum up Castells's position: networks, rather than hierarchical nation-states, are the primary power-holders in the network society. The power of networks is enacted by programmers and switchers—social actors that aren't necessarily identifiable as individuals or organized groups—who are able to program the goals of networks and enable coordination between networks. The skills of switchers are especially useful, for they enable networks to coordinate with one another, which is no mean feat seeing as how the default behavior of networks is either to ignore irrelevant networks or destroy competing ones.

Galloway and Thacker. In their study of networks, Galloway and Thacker (2007) largely agree with Castells's primary argument, namely that networks have "emerged as a dominant form describing the nature of control today, as well as resistance to it" (p. 4). However, where Castells finds networks to be neutral power structures, Galloway and Thacker describe network control to be "not liberating" in its "mere existence," for networks "exercise novel forms of control that operate at a level that is anonymous and nonhuman" (p. 5). Again like Castells, they argue that networks consist of human actors, yet they point out that "the moments when the network logic takes over—in the mob or the swarm, in contagion or infection—are the moments that are the most disorienting, the

most threatening to the integrity of the human ego," going on to say

> Hence a contradiction: the self-regulating and self-organizing qualities of emergent networked phenomena appear to engender and supplement the very thing that makes us human, yet one's ability to superimpose top-down control on that emergent structure evaporates in the blossoming of the network form, itself bent on eradicating the importance of any distinct or isolated node. (p. 5)

In other words, Galloway and Thacker argue that while networks consist of human actors with agency, the very existence of a network leads to the possibility of that network operating in ways that resists the "top-down control" of those actors. Rather than being an "accident" or a sign of the network in disorder, these moments are instead examples of "networks that work too well" (p. 6).

Galloway and Thacker locate the power of networks in *protocol*, which they define as "technoscientific rules and standards that govern relationships within networks" or, in the abstract, a "horizontal, distributed control apparatus that guides both the technical and political formation of computer networks, biological systems, and other media" (p. 28). In other words, a protocol is part of the technological structure on which networks operate, that is, the "rules" that determine how an email is sent or hypertext retrieved from a remote location. Abstracting from this concept, Galloway and Thacker see protocols in the "control apparatus" that determine the non-technical features of networks, whether or not those networks are explicitly instantiated in digital technology. Thus, the protocol is the rule by which the network is formed and operates both

technically and socially.

Building on this idea, Galloway and Thacker borrow another technical term to illustrate the way in which protocols are manipulated. This process is called an *exploit*, a word used in technical literature to describe the process for taking advantage of a protocol to access or manipulate a network in a way not intended by its builders. Or, as they put it, "protocological struggles do not center around changing existent technologies but instead involve discovering holes in existent technologies and projecting potential change through those holes," and it is these "holes" which are called "exploits" (p. 81). Galloway and Thacker maintain that exploits are the means by which counterpower can be enacted in networks, for exploits are able to reprogram networks, using the characteristics of the network—its openness, its pattern of growth and agnosticism towards information—to alter the network against itself.

Because their theory focuses on the ever-changing nature of networks, Galloway and Thacker criticize attempts to understand networks merely through graph theory. They claim that graph theory distorts our understanding of networks in three ways. First, they argue that node-edge graphs provide an unrealistic depiction of agency, becoming "diagrams of force relationships (edges) effected by discrete agencies (nodes)" (p. 33); that is, diagrams that would simplify the complicated relationship between force and agency in networks. Second, they believe graph theory leads to "diachronic blindness," wherein the graph's static depiction of relationships inhibits "an understanding of networks as sets of relations existing in time" that exist in the abstract, rather than in "material technologies" (pp. 33–34). Third, Galloway and Thacker find that the

topologies of network theory—centralized, decentralized, distributed—fail to capture the internal complexity of network structures, which, they argue, are in fact more diffuse, consisting of many different topologies existing simultaneously at different levels (p. 34). Galloway and Thacker conclude this critique with the following:

> Thus not only do existing network theories exclude the element that makes a network a network (its dynamic quality), but they also require that networks exist in relation to fixed, abstract configurations or patterns (either centralized or decentralized, either technical or political), and to specific anthropomorphic actors.
>
> Indeed, one of the arguments presented here is to reinforce the notion that material instantiation is coextensive with pattern formation. Material substrate and pattern formation exist in a mutually reciprocal relationship, a relationship that itself brings in social-political and technoscientific forces. (pp. 34–35)

In other words, Galloway and Thacker criticize any attempt to translate the network into something other than a network, eliminating the dynamism that characterizes these structures and, crucially, demanding that they be understood *as networks*, not in relation to some other structure, specifically structures like the abstract formations of graph theory. They then go on to suggest that the primary means of understanding networks *as* networks is through the understanding that "material instantiation is coextensive with pattern formation." In other words, we must consider the physical structures of networks, both technological and organic, as well as the patterns of behavior that define the

relations of nodes in the network.

Distribution and Resonance

Beyond network theory, I wish to highlight three further concepts that are useful in understanding the language-based structure of digital networks and the way in which those networks form and cooperate with each other.

Distribution. The first of these concepts is distribution. Modern cognitive science has convincingly demonstrated that cognition is a product of the interaction of mind and environment. The study of this interaction is known as distributed cognition, a field that has grown from the pioneering work of Edwin Hutchins. In *Cognition in the Wild* (1995), Hutchins demonstrates how the cognitive effort needed to pilot a large naval vessel exceeds the capacities of any one person, and is in fact dependent on the combined efforts of a number of crewmembers as well as the tools and social structures with which they interact. While theorists such as Gregory Bateson (2000, reprint) had argued earlier that the individual's cognitive and sensory apparatus exceeded the bounds of the body, Hutchins's demonstration of the collective cognitive effort of the piloting crew and their support technologies appears to have permanently altered the way in which individual cognition is perceived by anthropologists and cognitive scientists.

Hutchins's observation of distributed cognitive systems led him to two conclusions: first, the cognitive properties of systems are different from the cognitive properties of the people who comprise those systems. Distributed cognition is the result of the interaction of people with tools and the social structure by which they are organized. Second, because social relations in that social structure are actually

computations in the system, learning social relations is also learning how to perform cognitive computations in the system. In the case studies that follow this introduction, I will show how digital networks are fundamentally distributed and the effect that this distribution has on how researchers understand the discourse that is produced on these networks. Just as with other systems, the cognitive properties of networks are different from those of the individuals and technologies that make up that system. This difference is one of the key reasons for the unique communicative features of digital networks, and it must be taken into account in the investigation of the structural effects of digital networks on communication.

Autopoiesis. Maturana and Varela (1980) coined the term *autopoiesis* to describe what they saw to be the self-perpetuating nature of biological life forms. According to Maturana and Varela, autopoietic entities are those whose activities are designed to perpetuate their own organization. In other words, the main activity of an autopoietic entity is to continue its own existence. Building on this basic idea—which Maturana and Varela originally applied to individual cells—these two theorists explored its implications for human cognition and social relations. As part of this exploration, they showed how the perception of an external world is the product of physical senses. Relying on studies of color vision, they note that different animals have the ability to see more or fewer colors than others. For example, human color perception is three-dimensional: that is, it is based on the combination of three different colors. However, other animals have two or even four-dimensional color vision, meaning that they can "see" colors that are completely unperceivable by humans. This four-dimensional color vision would

fundamentally alter the way in which such creatures would perceive reality, in effect generating a completely different external reality than would be perceived by animals with different perception apparatuses.

Using this example, Maturana and Varela argue that physical structures—like the rods and cones that enable human color vision—create reality. Rather than apprehending an external reality, our senses create it. In their theory of autopoiesis, Maturana and Varela argue that it cannot be said that external reality provides an input to autopoietic—or living—systems, or that this reality is necessarily "real." Instead, they argue that autopoietic systems are "perturbed" by other structures, and it is these perturbations that result in perceptions. However, these perceptions are entirely dependent on the physical structure of the perturbed system. That is, if the system in question does not have the physical capability to recognize a particular stimulus, such as the perception of a color not visible for animals with two-dimensional color vision, that system cannot be perturbed by that stimulus. In this sense perturbations are not strictly external, but are determined by the structure of the entity being perturbed. Maturana and Varela further describe how individual autopoietic systems can communicate with each other, essentially sharing a perception of the world for a time. They call this "structural coupling," a process whereby two or more autopoietic entities enter into a mutual relationship whereby the autopoiesis—the self-perpetuation—of each is dependent on the other (1987).

Resonance. One of the primary uses of autopoietic theory in communication was made by Niklas Luhmann. In his *Ecological Communication* (1989), Luhmann calls

communication-based structural coupling *resonance*. According to Luhmann, systems can be differentiated from their environments by the fact that any environment will be more complex than a system that is part of that environment (Bednarz, 1989). Luhmann argues that systems and environments communicate by bringing their complexities into correspondence with each other. They do this by creating structures that reduce the complexity of the environment through resonance (p. 15ff.). According to Luhmann, autopoiesis dictates that systems, such as animals or people, can only interact with their environments through resonance based on their own structures. In this sense, Luhmann argues that resonance is a specialized form of perturbation. Because of this difference, Luhmann argues that systems that are more complex have a better chance for resonance. One way in which this complex resonance occurs is with language, which, because it is linear and selective, cannot represent the world all at once. Meaning, then, is "a representation of world complexity that is actualizable at any moment" (p. 17). This meaning is established through difference, which is a process set up by the system for turning facts from the environment into information. Subsystems are created in the larger system to allow for difference and the necessary complexity for resonance, and the unity of the system can be represented in the system thus creating difference unintentionally and allowing for self observation. In other words, communication—because of its fecundity, its generativity—is one means whereby two complex structures can achieve resonance. And one characteristic of resonance is that systems that are open to more inputs—are more complex—are better able to achieve resonance with their environment.

Resonance serves a key role in networks. This role can be seen in small instances,

like the rallying of individuals to a singular cause through ad hoc networking capabilities, or in larger ones, like the emergence of rules dictating the appropriate behavior of millions of contributors to an online encyclopedia. It may also be present in social networking features that help to provide some of the constraints on anti-social behavior that exist offline: the disapproval of acquaintances, peers, or mere onlookers, while it allows for the creation of new forms of identity and social relations (Faigley, 1992; Kemp, 1995).

In short, I argue that digital networks are fundamentally distributed in that, as both Castells and Galloway and Thacker note, the capacities of the network exceed the capacities of any one node in the network, and, frequently, the program of a network is not visible to every node (or *any* node) in the network. While networks are not themselves determinative, a theory of distribution and the role it plays in cognition is helpful for locating the role of individual, rhetorical agency in digital networks. Second, networks, in their need for coordination through language processes, depend on resonance to operate. The ability for one network to resonate with another, thereby establishing a coordination relationship with that network, is crucial to both the way in which a digital network develops and the language which is produced by that network. In the following chapters, I will show how resonance processes play a key role in the work of switchers enabling coordination between different networks.

Memory and Delivery in Digital Networks

The question proposed by this project is: What do memory and delivery look like when they are embodied, not in the physical, human body, but rather the digital network?

In other words, how can theories of memory and delivery be described that are specific to the requirements and affordances of digital networking, just as classical theories of memory and delivery were designed to meet the needs of oral speechmaking? I argue that in the case of digital networks, the processes of resonance and switching, program and protocol serve a role similar to that of memory and delivery, respectively, in classical rhetorical practice.

Memory

Rhetorical scholars have in recent years become more interested in the practices associated with memory and delivery, seeing in their focus on embodiment a new means of addressing the embodied features of writing in digital environments. More generally, scholars have become increasingly aware of the media-specific assumptions that are common to our understanding of language and have made a concerted effort to adapt existing theories—or provide new theories—to the realities of emerging media communication. A number of scholars have begun to investigate the role of memory in writing practices and thought, aided by the masterly historical investigations of Carruthers (1998, 2008) into late classical and medieval uses of memory. In recent years, scholars have investigated the relationship between memory and invention (Ryan, 2004) and specifically looked at the role that memory plays in digital environments (Haskins, 2007; Haynes, 2007; Van Ittersum, 2007, 2009; Whittemore, 2008). In his study of the rhetorical canon for digital writing, Brooke (2009) addresses the role of memory at length. In this section, I would like to use his approach as a starting point for my discussion of memory in digital networking.

Presence/absence, pattern/randomness. A crucial function of memory has traditionally been how information is accessed. The dominant metaphor for this access has been spatial: in historical rhetorical training, memory palaces organized recall in three-dimensional space (Yates, 1999), while print and physical archives placed information in rigid two-dimensional grids, the permanence of which aided recall (Ong, 2004). Brooke describes this view of memory-as-information-access as the interplay between "presence/absence" (2009, pp. 145–148). According to Brooke, treating memory as if it were only the act of recording information, whether in the memory or in external extensions of the memory, transforms memory into simply storage and access of a recorded piece of information, rather than an active practice that affects how that information is received and processed (p. 143). Instead of this "McLuhan-esque attitude" that casts memory as a kind of storage, Brooke follows Derrida (1996) and Hayles (1999) in arguing that memory can also be productively viewed as the interplay of pattern and randomness. As an example of how pattern/randomness affects memory, Brooke describes the 1986 Challenger disaster, writing, "the lack of pattern preceding the Challenger's explosion only serves to heighten the sense of tragic randomness with which the event is viewed historically" (p. 150). In other words, memory is the process whereby certain patterns are formed and remembered, as well as the way in which patterns are lost or never formed. While presence/absence is certainly an important part of memory, he recasts this part of the canon as "persistence," not just the difference between pattern and randomness, but the "ability to build and maintain patterns, although those patterns may be tentative and ultimately fade into the background" (p. 157). To put it another way, the

rhetorical practice of persistence in memory is the generation of meaningful pattern against a background of randomness (the prime example being the web). However, it is not expected that this pattern must continue, or be archived, as the McLuhan-esque position would suggest.

Brooke has provided some important insights into the workings of memory in communication in general. In this study, I will be focusing specifically on the role that memory plays in digital networking rather than attempting to retheorize memory. That is, I'm asking what are the digital network equivalents to the act of memorizing and the techniques that grew around it in rhetorical instruction. While one could easily chart the instances of presence and absence, pattern and randomness in digital networking, I will argue that memory in digital networking has a more specific role, one related to the specific features of digital networks.

Resonance and switching. According to Frentz (2006) ancient philosophers saw memory as either what people know or remember about culture, as well as knowledge of the self. One way of thinking about this distinction is to cast memory as the interplay between the internal and the external. It is, however, somewhat disingenuous to speak of distinctions between internal and external in the case of humans because of the body of literature that specifically challenges this type of line-drawing (Shore, 1996; Varela, Thompson, & Rosch, 1991). However, in the case of networks, which operate by a binary (on|off) logic, and autopoietic communication systems, which can be distinguished from their environment by their susceptibility to perturbations, it is possible to make distinctions between what is inside the digital network and what is outside it.

From the perspective of digital networks, then, recall is the process bringing into alignment two separate frames or models, or, more frequently, two networks. As I will show in the following case studies, the process of switching—what I have referred to as resonance or structural coupling—is similar to the action of memory. Memorizing a text is, at one level, the act of bringing two systems into alignment or coordination with each other, and this act of resonance is crucial not just to recall, but also to the functioning of digital networks. That is, one embodied practice of memory is the coupling of perceptions of reality via language. In the case of digital networks, this coupling takes the form of resonance, which, building on Luhmann (1989), I will argue is the language practices used to facilitate switching or coordination between networks. In the case studies, I will examine instances of successful and unsuccessful switching in order to determine how this switching occurs.

Delivery

As documented by Brooke (2009), the tendency in rhetorical studies that have tried to rehabilitate delivery for modern communication has been to focus on the technologies of transmitting texts or other information from one place to another. While this is a worthwhile line of investigation, I will have little to say about it in this project, if only because it has been investigated so thoroughly. Rather in this project, I will treat the means by which a text is communicated from one place to another or one person to another as but one facet of a much larger issue: the physical embodiment of texts and the rhetorical effects that entail from that embodiment. While oral speechmakers can be said to be "transmitting" a text, this transmission has not been the primary focus of delivery

instruction in rhetorical history. Rather, the focus of oral speakers has been on the details of the speaker's physical apparatuses—the voice, the posture, gesture—for communicating and how they can be marshaled to the benefit of the speaker's message. In the case of this investigation, the body in question is the digital network; therefore, the network's control features determine the means by which texts are distributed throughout that network. Because communication mobilizes networks, delivery is often synonymous with the study and measure of network effects.

Network effects. Texts create networks of communication in any medium. They do this actively, in the sense that they mobilize other texts, along with the authors of those texts and their readers, to make meaning. At the most basic level, this occurs through the use of the connotations of words, cultural associations, and the very différance of language itself. Texts create networks by acting on the subconscious mind of the reader through associations, tone, and other tacit uses of language. Finally, texts explicitly refer to other texts, thereby creating networks of meaning in which the information or arguments in one text are defined in relation to other texts. Once a text is disseminated, it creates new networks. These new networks could be continuations of the previous references, as new texts reference the first text. The text, then, exists at a node connecting past references to future ones. Of course, these networks depend on readers to actualize them, that is, to recognize these interconnections in order to make them relevant or meaningful. At any one moment such a network might not be actualized by a reader who lacks sufficient knowledge of the sources in question to recognize those connections. For example, this would be the case of a reader of a highly technical document who

lacked the technical expertise in question, or the reader of a document from a different culture or time. However, such networks would always be actualizable, waiting only on the appearance of a reader able to make those connections.

Further, texts are specifically embodied. By which I mean, no text can exist unless it appears in a specific physical arrangement: as words printed on paper, as ones and zeros stored on a hard drive and displayed as pixels on a screen. As I talk of delivery effects in this dissertation, it will always be assumed that these effects depend on physical structures that instantiate the textual communication in digital networks. Texts are also fundamentally distributed. Not only are they physically spread into the environment, existing in multiple copies on multiple hard drives or in printed copies, but the following case studies demonstrate that texts exist not as unified wholes but as compilations that are reassembled on the fly in different ways by different readers for different purposes. These ad hoc texts are not always coherent, at least in the conventional sense. They are extreme examples of the multimedia texts described by Brooke (2009, p. 11ff.) that present different versions of themselves to readers.

Program, protocol, exploit. Following Castells (2000a, 2004) and Galloway and Thacker (2007), I argue that digital networks are governed by their programs and the protocols that determine their operation, and that they are susceptible to the exploitation of these protocols. Just as the ancient practice of the delivery of oral texts was constrained by the physical reality of the body—the effects the voice could produce, the range of motion possible for the limbs—so delivery on digital networks is constrained in particular ways by the function of those networks. These functions—both in the physical

reality of technology and human actors and the linguistic realities of the program of networks and protocols—determine the domain wherein the delivery of texts in digital networks operates. As such, it is necessary for rhetorical scholars to understand these features of digital networks when investigating them, both as a means of understanding those networks as well as understanding which rhetorical interventions are possible in those networks.

Twitter

The primary means I have used to investigate the role of memory and delivery in digital networking are three case studies of communication on digital networks. Undoubtedly there are other means of investigating digital networks, but their distributed nature and constant flux suggested that the case study methodology, with its openness to various kinds of data as well as historical and contextual information, was an appropriate means of dealing with these networks. While the case studies I have assembled here deal with texts as varied as video, blog posts, newspaper reports, and congressional communications, the primary source for all three is the data I have collected from Twitter. Twitter is a microblogging platform that allows users to post short messages to be viewed by other users or, in most cases, by anyone on the Internet. Twitter provides its users with a number of social networking features for creating and participating in both long-term and ad hoc networks. For this reason, Twitter is an incredibly rich source of information about the structure of digital networks, the types of communication that occur on these networks, and the behavior of their users. In this section, I provide a brief overview of Twitter's history and its most prominent features. This information will

inform the case studies that follow, for the studies make frequent reference to Twitter and the unique terminology and behaviors that have been adopted by its users.

Twitter as Writing Technology

Blogs, whose name derived from "web log," originally developed as short- to medium-sized posts dedicated to the personal lives of their authors. These posts were created on web pages, typically added to the top, and were periodically updated. Updates were often accomplished by altering a single html file, adding new material to the file with each edit. To read an early blog, a reader had to make an effort to regularly visit the blog site and check to see if the author had updated the text.

Two technologies simplified this process. The first was the permalink. As websites became connected to databases, individual blog posts were no longer housed on a single static page, but were given unique web addresses that could be directly accessed later by other readers. Before the widespread adoption of this technology, if you wanted to reference a blog post, you had to put a link to the main blog page. If new posts appeared in between the time when you made the reference and when a reader followed it, the individual post could be lost in the stream of posts on these static pages. The permalink allowed bloggers referencing specific posts to link directly to those posts, thereby creating a reliable way to anchor the conversations that drive most blogs. The other technology that enabled widespread attention to blogs was RSS. This "push" technology made it possible for readers to be notified when a new blog post was created, rather than having to repeatedly check the blog's homepage for new material, a tedious task that had to be replicated for each blog one wanted to read.

Microblogs. Microblogs adopt these two main features of blogs—the permalink and push publishing—but their writing model isn't the tract or diary, as is the case with regular blogs. Rather, they are built on the model of phone-based text messaging, or short messaging services (SMS). Twitter, the most prominent microblogging service, has adopted a 140-character limit for posts specifically so Twitter messages can be transmitted in their entirety via SMS. One effect of this connection is that microblogs exist at a further remove from print than do regular blogs in that they are based on writing with no print analogue, the electronic text message. However, the organization of sites like Twitter continues the illusion of the page. Microblogs, then, exist at the intersection of a number of technologies: the printed page, blogs, and SMS.

Twitter Features

Twitter allows users to post messages to the service through three different interfaces: the site itself, via SMS, or through third-party applications accessing the site via its application programming interface or API. The API allows third-party developers to create programs that access the site's data or functionality without users actually having to visit the site. Twitter messages are posted on a unique user page that can be set as open to all visitors, or protected so that only a user's followers can view it. Users may then follow each other's posts. When one user follows another, all followed users' posts appear on the home page of the follower in a continuous stream with news posts appearing at the top.

Twitter allows for three kinds of message routing. First, it allows for replies to a users' post, using the syntax "@username." These at-replies are routed to a third page

created by Twitter that shows all at-replies, regardless of whether or not the user is following the replier. Originally, the Twitter website would only route messages to this page that begin with the at-reply, while third party Twitter clients would often include all messages that contain the at-reply anywhere in their body. One effect of this method was that a unique form of message, the retweet, was prevented from appearing on a user's reply page on Twitter's official website. The retweet is a rebroadcast of another user's message, often preceded by "RT" and occasionally adding new information to the original post. Typically these retweets merely recited the first message word-for-word, adding only the RT identifier and the user name of the original sender. Occasionally users add their own messages or commentary to retweets, although the 140-character limit (and a lack of clear means of distinguishing between the original and added material) often prevents this. In late 2008, Twitter altered the way in which the at-reply page was compiled so that it displayed all messages in which the user was referenced via the @-symbol, not just those that began with the symbol. Additionally, it changed the way at-replies appeared in a user's main Twitter stream, only showing those replies from a user's friends when the user was also a friend of the person being replied to. In 2009, Twitter made retweets an official part of the site's architecture, adding a new page to the site where users could track their friends' retweets as well as how often their own messages were retweeted. Finally, Twitter also allows for users to send each other private messages, called "direct messages" or DMs. These direct messages are only visible to the sender and receiver and are initiated by the syntax "d username." Users may only send direct messages to other users if those users are following them. Twitter also allows users

to tag any public message with keywords using the syntax "#keyword." These keywords, referred to as hashtags, can be tracked using third-party applications or the search engine at search.twitter.com.

For each user Twitter creates five distinct, blog-like pages for accessing their own and other's tweets. The user's profile, which contains his or her posts; a page featuring the posts of followed users; at-replies; retweets, divided into retweets by the user's friends, the user's own retweets, and the user's messages that had been retweeted; and direct messages. Searching for hashtags in messages can create additional aggregations of those messages. These pages are like blogs in that they provide unique web addresses for each message and new messages appear at the top of the stream. Additionally, some of these pages can be accessed via RSS feeds. Significantly, only one of these pages is publicly available: the user's own twitter stream. The others—replies, DMs, and the home page that streams followed users' tweets—are only accessible to the user; however, these messages, excluding DMs, can be viewed and collated using the Twitter search engine as well as directly accessing the Twitter API.

Status Messages and Embodiment

As Haraway (1991) notes, one effect of modern science has been to turn the body into a text to be read and decoded. Similarly, since the time of Aristotle, rhetoricians have attempted to analyze the effects of their argumentation—including cognition, emotion, and perception—such that effective rhetorical techniques could be identified and replicated. In doing so, they utilized conceptual models of humanity—see Aristotle's discussions of old and young men—all of them textual, all explicitly designed to be the

psychological equivalent of a person that could stand in for the real thing for the purpose of designing arguments. If we are cyborgs due to our relation to language, then status messages represent a significant textual manifestation of our cyborg selves. In aggregate, status messages are textual models of humanity, only at the level of the individual and the group and updated in real time.

The status message is a textual trace of the effort to externalize and preserve what has been in previous times internal linguistic practices. Status messages routinely record a user's thoughts, private opinions and reactions, momentary interests, and, with increasing frequency, physical location. While instant messages and SMS perform a similar function, these messages are more likely to be sequestered in ad hoc, ephemeral networks that are only accessible via proprietary carriers. The status message, however, is typically part of networks that are: 1) archived, such that users can navigate messages; 2) available via the Internet, and as such can be made publicly accessible. These networks are a key component in the process of converting our identities not just into data, but into useable data. More than merely extending ourselves, this technology is one way in which the connection of atoms and bits in everyware is being enacted, via the creation of shadow versions of ourselves, ghosts in the machine that will become increasingly indistinguishable from our "real" selves. It is no mistake that our textuality is being co-opted into a larger socio-technological apparatus. The question that remains is what is the nature of this technological apparatus? Specifically, what are its effects on the cognitive process, and which tasks does it simplify?

The status message as cognitive tool. I would suggest one possible answer: that

we have to think of the status message as a tool that alters the cognitive potential of its users as well as the social systems in which they operate. Wikipedia is one example of a textual product that has both depended on the cognitive assistance provided by social networking, while simultaneously upending traditional forms of identity creation and the authority associated with these identities.

These behaviors are quite different from those observed by Faigley (1992) in his study of his students' use of a networked chat program. The program, with which students conducted a live, synchronous chat during class, allowed students to send each other anonymous messages. While the system identified users by usernames, Faigley had instructed the students to use pseudonyms. In one of the interchanges Faigley covers in the book, the students' discussion devolves into vulgarity, as the students express misogynistic ideas and generally, as Faigley puts it, failed to "maintain bourgeois standards of politeness in classroom discussions" (p. 190). This exchange, and others like it, led Faigley to conclude that electronic communication such as this decenters the self, a fact that challenges one traditional goal of writing instruction: the ongoing intellectual development of the writer. He notes that "writing about the self" was perceived in the modernist paradigm to be of "great importance" for it was thought to promote "reflection about self-development" (p. 191). Faigley goes on to say

> Networked writing displaces the modernist conception of writing as hard work aimed at producing an enduring object. Acts of networked writing are most often quickly produced, quickly consumed, and quickly discarded.… It is also difficult for teachers to maintain a notion of

> students discovering their authentic selves through writing when student writers try on and exchange identities in electronic discussions, even from one message to the next. (p. 191)

While Faigley was commenting on student writing in a classroom environment, his observations illuminate a striking change in behavior in networked writers: the self of writers on systems like Twitter is not decentered in the way that Faigley observed in his classroom. Rather, it is centered around the individual user's account, the features of which—the body of messages, the profile page—are used to establish a center or locus for the actions of the user. Of course, the self that is fashioned in this way by the user could be fictional or pseudononymous, as many such profiles are, but it is centered. I argue that this centering, the location of a self in the body of messages created on the site, coupled with its other social networking features, is perceived by the users of the site as a significant extension of their person. That is, as Haraway notes, it is a part of their self where the body and the machine of language meet and become one (Haraway, 1991). As we will see in the next chapter, the very fact that Congressman Culberson and some of his followers initially perceive any attempt to curtail his use of Twitter as a significant imposition on his right to free speech underlines this point.

Interestingly, Twitter was designed to simplify the cognitive load required to maintain the whereabouts of individuals that make up distributed delivery systems (such as bike messengers) (Makice, 2009). The part of the system that has been deemed the most useful by users is its ability to maintain ambient awareness of the activities of a widely distributed network of individuals. The status message is a key tool for managing

large, distributed social networks. As the tool has become more entrenched, these social networks have become a greater part of people's lives, making the tool more and more necessary.

Status messages and phatic communication. Status messages like those that drive Twitter would seem to be mostly phatic, that is, they support social engagement rather than more direct information seeking. While much of the conversation that occurs on Twitter could be easily classified as phatic, it would be a mistake to assume that because of this that communication isn't active and doesn't achieve real communicative goals. Social networking and the behaviors that drive communication on social networking sites—mobile devices, status messages, instantaneous feedback—drive communication towards a fulsome rhetoric. That is, it is no longer possible to segregate texts as separate rhetorical acts, but rather all textual activity is interdependent. You can't separate one textual event from another, because all are connected through the identity.

Case Studies

Chapter two examines a controversy initiated by John Culberson, a U.S. Congressman from Texas. In the spring of 2008, Culberson posted a message on his Twitter account claiming that other members of Congress were attempting to approve a rule preventing him and his colleagues from using Twitter or other Internet communication services. The Congressman's initial post stirred up an immediate emotional response from other Twitter users, but, as more details surfaced about his complaints, many of those users began to question his interpretation of this rule. The ensuing conversation—over the interpretation of events, primary documents like letters

and media statements from other Congresspersons, and the role of emerging media in public forums—continued over a period of two weeks, generating thousands of messages on the network as well as numerous blog responses and major media coverage. In this case study, I examine how the protocol and program of Twitter affected the progress of this conversation—and possibly the conclusions it arrived at—as well as how switching and other forms of resonance were used by participants in the conversation to further their claims.

Chapter three focuses on a non-traditional debate and the ways that networking technology allows for new forms of group communication. During a keynote interview between Facebook Founder and CEO Mark Zuckerberg and business journalist Sarah Lacy at the 2008 South by Southwest Interactive Conference, audience members maintained a backchannel of communication on Twitter. When some members of the audience became frustrated with Zuckerberg and Lacy's behavior, the backchannel conversation turned into a freewheeling—and frequently nasty—critique of the speakers. Eventually that critique spilled offline and erupted into a mini-revolt, where audience members shouted at the stage and wrested control of the interview from Lacy. By examining the audience-members' messages, as well as video of the event, I analyze how the back-channel conversation enabled by Twitter contributed to the unruliness of the audience. This analysis, along with the unique feature of this study, that the majority of participants in the Twitter discussion were simultaneously viewing the same event in the same geographic location, allows me to address the role played by resonance of offline events—that is, events external to the network—in the network communications. Further,

in this case I look at the speed with which ad hoc networks like the one formed by the audience can be programmed to a particular purpose, and the ways in which such a program is affected by rhetorical activities.

My final case study investigates a less traditional form of communication: the topic-based networks generated by Twitter users' use of hashtags. In chapter four I analyze a group of Twitter messages from 2009 dealing with the debate over health care reform. Encompassing a wide range of opinions from users of different political stripes, the ad-hoc networks created by users using hashtags represents a new form of group communication enabled by networked writing. Unlike the previous case, these users weren't united by social connections, common arguments, or a singled shared event. Instead, the ability to tag messages in Twitter by topic allowed for the generation of a network of messages that by its very nature was unruly and seemingly chaotic. However, like other networks, when viewed as a group these hashtag networks demonstrate regularities, such as a dependence on resonance for their continued existence and the existence of an overall program and set of protocols to which they must adhere.

Overall, these studies serve to demonstrate the importance of the embodied features of digital networks and the effect of those features on the communication practices of the users of those networks. Further, they show how the classical fields of memory and delivery, with their focus on the embodiment of oral communication, provide a framework for helping rhetorical theorists and practitioners to understand and address the embodied features of digital networking in rhetorical practice.

Chapter 2

"Straight from the source": Coordination in Digital Networks

Introduction

In this chapter I argue that the memory and delivery functions of digital networks, as represented by resonance and switching, program and protocol, play a crucial role in shaping the arguments that are made on those networks. As I maintained in the previous chapter, digital networks are distinct from social networks. While social networks are the creation of social relations between individuals, digital networks are fundamentally a product of writing, from the software that controls them, to the writing that constitutes their interfaces and the messages they transmit. Of course, online social networks are digital networks as well. One of the reasons I have chosen Twitter as the primary source of these case studies is that, while Twitter has social networking features, its primary function is to be a digital network. That is, while the Twitter platform is host to a number of social networks, the network represented by Twitter itself is a written one, and that network has features that are unique when compared to social networks. Twitter is a network of networks. This network of all Twitter users is being increasingly mined for the thoughts and reactions of those users in real-time via search (Ostrow, 2009a), or historically in the database of tweets acquired by the Library of Congress (Raymond, 2010). It is this over-arching network that produces some of the most significant public features of Twitter. For example, Twitter's "trending topics," a list of the most popular keywords being discussed on the site at any one time, or hashtags, a means of

commenting on a topic so that that comment is visible to people who a user isn't following, are both used to navigate not any one social network, but the entire written network of the site, a live version of what Battelle (2005) has called the "database of intentions."

The network of all Twitter users offers everyone, both Twitter users and non-users, a fascinating record of what individuals are interested in at any one moment. However, aside from the production of trending topics, the Twitter network can only be interfaced with in a productive manner through search. Search has become the major method of interacting with the web as a whole, but the primary means of interaction used by members of social networks remains their individual networks of friends and followers. It is at this level that Twitter becomes a network of networks. At the most basic level, each user creates a unique network on the site, a network centered on themselves and their friends and followers. Unlike other social networks, such as Facebook, Twitter allows for the creation of ad hoc networks, that is, networks that can be generated on the fly by users who don't necessarily participate in the same social networks on a regular basis. These networks are frequently based on topics of discussion, and, just as frequently, those topics are directly related to events in the real world, such as breaking news. However, they can also be related to network-centric activities such as the proliferation of memes, or cultural ideas transmitted via networks, facilitated by trending topics and hashtags. These latter networks are frequently pure verbal play, independent of offline news or events.

The case study I will examine in this chapter takes the form of one of these ad hoc

networks. Even though it began with the particular Twitter network of one individual, it became a freewheeling conversation between Twitter users both inside and outside that network, along with the wider populace. Whether focused on particular events, topics, or individuals, these networks are most often structured as large-scale, group conversations, in which individuals post and respond to each other's comments on the subject at hand. A pertinent feature of Twitter is that these ad hoc networks aren't disconnected or siloed off from each other, or from the general public, as they often are on social networking sites like Facebook or on chat boards, (the latter of which are the spiritual, if not actual, ancestors of such conversations). Further, because of Twitter's prominence, these conversations have much more public traction, as we shall see, than they would have if they had occurred on a blog or some other online venue. Because the protocological orientation of these networks is to make their contents public, visible, and linkable, they are open to many different kinds of interactions via resonance with networks outside of Twitter.

Background

On July 8, 2008, House Republican Leader John Boehner posted a memo on his website with the subject line, "An Attack on Internet Free Speech" (Boehner, 2008). In this memo, Boehner claimed that the "Committee on House Administration is considering a new rule," a rule that, according to Boehner, would bring the increasing use of social media by House members "to a screeching halt." He further stated that if the rule were accepted "the House Administration Committee would develop a list of 'approved' websites, and Members of Congress could post content only such websites,"

going on to explain that this would "significantly [curtail]" the "free flow of information over the Internet" between the public and elected officials, resulting in "new government censorship of the Internet." In this memo, Boehner provided a link to the letter from the Democratic chairman of the Franking Commission, Michael Capuano, which outlined the proposed changes (Capuano, 2008), and identified three Republican representatives, Vern Ehlers, Kevin McCarthy, and Tom Price, as leaders of the opposition to this move.

In the early afternoon of July 8, 2008, John Culberson, a member of the House of Representatives, posted a message to Twitter that read: "I just learned the Dems are trying to censor Congressmen's ability to use Twitter Qik YouTube Utterz [sic] etc - outrageous and I will fight them." Within three minutes, a Twitter user named mattress[1] replied to Culberson's message, writing that this change "must mean you're having quite an effect, keep it up!" This first response was soon followed by many more—469 messages referenced Culberson during the next twenty-four hours, a total that increased to 1,303 over the next thirteen days—many of which echoed the sentiment in mattress's post. Like mattress, many users quickly jumped to Culberson's defense, encouraging him to "fight the good fight," support freedom of speech, and even to openly defy the House rule that Culberson claimed would have prevented him from sending messages to Twitter and other social networking sites. Within five minutes of Culberson's post, however, other Twitter users began to question Culberson's claim, echoing the concerns of RobertFischer, who asked Culberson "Got cite?", looking for a primary document or other source that would support the Congressman's claim.

[1] With some exceptions, in this chapter I will refer to Twitter users by their usernames, reprinting them as they appear on the site.

At 5:45 p.m. on July 8, 2008, perhaps in response to these calls for more information Culberson posted a link to Capuano's letter outlining the proposed changes. In the letter, Capuano—a Democratic Congressman from Massachusetts and then Chairman of the Congressional Commission on Mailing Standards, or Franking Commission—addressed Robert Brady, the Chairman of the Committee on House Administration (CHA). The link Culberson appended was to the copy of the letter hosted on Boehner's website. In this letter, from which I will quote at length, Capuano writes

> current CHA regulations have been interpreted to prohibit Members from posting official content outside of the House.gov domain. Unfortunately, many Members who wish to display video on their websites have found that the existing tools available within the House to do so are not user-friendly or efficient, and that in addition, server storage space within the House is currently insufficient to meet the growing demand for video. The House Leadership and your committee began to examine solutions to this situation last year and the Franking Commission recently engaged in detailed discussions of possible solutions. Specifically, we discussed the ongoing effort to establish designated House "channels" on external sites. This would allow a Member to post video material on a qualifying external website and then embed the video on his or her Member site from this external site. The concept of an "official" external channel has been adopted by other government agencies and it could be available to the House in short order if the relevant CHA regulations and practice are

> amended. I am pleased to forward recommendations on this matter to CITA for review and consideration. (Capuano, 2008)

In other words, Capuano pointed out that Members of the House were unable to post videos to their official websites because the technical tools for doing so were lacking and there wasn't sufficient "storage space" on the computer servers used by the House to host this media. This problem was compounded by the fact that, according to Capuano, "current CHA regulations" were then read as preventing Members from posting "official content" outside of the House.gov domain. In response, Capuano proposed some solutions: creating "designated House 'channels' on external sites"—one such channel now exists on YouTube: ("HouseHub," n.d.)—and altering the CHA rules that were being interpreted as prohibiting this behavior altogether. Capuano then suggested four recommendations for the CHA regarding video and establishing an "'official' external channel":

- Official content posted on an external domain must be clearly identified as produced by a House office for official purposes, and meet existing content rules and regulations;
- To the maximum extent possible, the official content should not be posted on a website or page where it may appear with commercial or political information or any other information not in compliance with the House's content guidelines.
- Any link from a House website to an external site on which the Member video is hosted must contain an exit notice.

- CHA, the Office of Web Assistance (OWA), or other designated House entity should maintain a list of external sites that meet whatever requirements are established by CHA. (Capuano, 2008)

The letter contains two other statements will become important in the following discussion. First, Capuano writes, "nothing in these recommendations should be construed as a recommendation to change the current House rules and regulations governing the content of official communications." Second, he adds, "further changes to CHA regulations and practice may be necessary to account for the continual emergence of new technologies."

While there is some confusion in these sentences—earlier, Capuano suggested that "relevant CHA regulations and practice" would need to be "amended" to allow the change, but at the end of the letter he claimed that his recommendation was to be seen as a "recommendation to change current…rules and regulations," ending by claiming that these rules might, in fact, need to be changed in the future—it would seem that Capuano's committee was trying to protect the ability of Congresspersons like Culberson to continue using new technologies. However, Culberson interpreted this letter quite differently, inferring the opposite meaning; namely, that the goal of Capuano's committee was to restrict these communications, thus preventing him and his colleagues from using emerging communication resources like Twitter. Here is how Culberson described the letter in a series of tweets created 5:45–5:53 p.m. on July 8:

> Here is Dem letter asking for a rule req prior approval for all posts on Twitter etc: http://tinyurl.com/6mkvvk

> The Dems will do this unless the Internet community stops them
>
> The rule proposed by the Dems would require me to submit this Tweet to the House Franking Comm for prior approval before I cuold [sic] post it
>
> I also must have a preapproved disclaimer on every Tweet that it is an official communication from a federal official for official business
>
> No more live Qk videos - no more live Tweets from the House floor or anywhere in the Capitol - no more www communication w/o prior approval
>
> @mattress Tell everyone you know on www social media that the Ds are about to shut down all non approved www communication from Congressmen
>
> Remember when I first started Tweeting I said the deepest darkest hole in Washington was theHouse [sic] floor which is run like the Supreme Soviet

In these messages, Culberson attempted to support his earlier claims about the proposed rule change by providing an interpretation of Capuano's letter, arguing that in his letter Capuano had asserted the right of the CHA to approve all messages submitted by members of Congress to social media sites. Culberson's use of "etc" also appears to be a reference back to his previous message and the list of social media sites he included there: "Twitter Qik YouTube Utterz etc." In this case, he was arguing that the "Dems" wanted to assert prior approval over not just text, but also audio (Utterz) and video (Qik, YouTube) messages.

Over the next two weeks, Culberson continued to publicize his interpretation of

this letter, claiming that if this rule were passed he and other representatives would be prevented from using Twitter, or any other form of social media. These claims drew attention from both other Twitter users and the mainstream media, and, instead of Boehner or Representatives Ehlers, McCarthy, and Price, Culberson became the primary face for the opposition to this supposed rule change. While a significant number of Culberson's followers expressed their support for him, both immediately after he made his claim and over the following weeks, other followers questioned his interpretation of the Capuano letter, using blogs and other forms of media to criticize his claims and his behavior, accusing him of distorting the letter, grandstanding for attention, and generally engaging in partisan politics. Culberson responded to these claims on his Twitter account and in his self-produced videos and other media, defending his interpretation by arguing, at various times, that Capuano had confirmed his analysis in a private discussion, that mainstream media reports supported his interpretation, and, finally, that he had been wrong—not in his interpretation of the letter, but in his partisan language—eventually vowing to work with his political rivals to ensure transparency in government and the continued access of representatives to social media. In this chapter, I will examine how the use of switching for resonance by Culberson and his Twitter followers, as well as the protocols of Twitter and the program of Culberson's Twitter network had discernible effects on the way in which this argument unfolded, how the conversation was responded to by other networks, and how the influence of the Twitter network moderated Culberson's eventual position.

Data Set

The primary data source for this case study is the ad hoc network created on Twitter by Culberson's original "censorship" message. In addition to this Twitter data, I've consulted reactions to Culberson's message and the entire debate that appeared on blogs and in the national media, many of which were shared in the Twitter stream by Culberson or his followers. The Twitter network existed for a time in a complex web of reciprocal conversation, and its interconnection had a significant effect on how the conversation developed over time. In examining this case, I identify the ways in which writing generates ad hoc networks like the one that arose around this debate. Further, I demonstrate the roles that program, protocol, resonance, and switching played in the development of that network and related networks and the effects that these processes had on the rhetorical practices of its participants.

Gathering Data

The Twitter data referenced in this chapter was collected from the Twitter search engine at http://search.twitter.com. In the summer of 2008 I performed two searches: the first was of all the publicly available tweets authored by johnculberson between July 5, 2008, and July 21, 2008. The second was of all tweets during the same period that contained the text "@johnculberson." The first search returned 380 messages by Culberson and the second 1,347 referencing his account. I then merged these results into a single list consisting of 1,727 messages that I then sorted by the date and time they were posted to the site. While there are messages in the data set from users all over the country and outside of the U.S., all dates and times for messages presented here have been

adjusted to Eastern Standard Time, the local time for Washington D.C., where Culberson was primarily located during the time period covered by this study.

These searches resulted in a significant narrowing of the scope of this discussion; that is, the list of messages I collected represents a sampling of total number of messages referencing this event. When I began analyzing this data, it was clear that the users sometimes referred to messages referencing Culberson or the debate that are not included in the data set. These messages do not appear in the set because they either did not contain the text "@johnculberson," or were sent from protected or deleted accounts, preventing them from being included in the search results. In at least one case, a user referenced a set of tweets from a third party who misspelled Culberson's user name as "johnculbertson," resulting in those messages not being included in the search results or being routed to Culberson's @reply page, therefore making it unlikely that they were ever seen by him. In general, the data set contains messages that would not have been seen by Culberson himself. In the summer of 2008, Twitter's default behavior was to show only messages that began with *@username* when users clicked on the @replies section of their account. This means that messages in the study that contain @johnculberson in the body of the message, as opposed to the opening, were not routed to Culberson's @reply page on Twitter, and possibly weren't included in the list of these messages in whatever third-party Twitter applications that Culberson may have been using at the time.

To sum up, this data set represents a selection of the Twitter messages referring to Culberson or his censorship claim. Because of both the technical limitations of Twitter search and the ways in which Tweets were archived at the time the data was collected,

this selection is neither inclusive of all the messages pertaining to this topic during the time period, nor is it necessarily representative of the set of messages that any one user would have seen at the time, unless that user followed a search process similar to the one outlined above in my description of gathering the data. While such a data set is not ideal, it does have value as a representation of communication on this network, and digital networks are themselves frequently difficult to completely capture, often revealing themselves to individuals in ways that are partial or incomplete and, in general, are unique to a particular user. As such, the following should be considered an analysis of a network that may be glimpsed only fleetingly by users whose reactions to it are influenced by these incomplete perceptions. In the following analysis, I examine the network represented by this data set, and attempt to explicate the role that the protocol of Twitter and other networks played in the way in which the conversation was conducted, the program of these networks, and how switching and resonance process positioned this network in relation to outside networks, such as the news media.

Program and Protocol

In this section I will discuss the effect that various programs—of Twitter in general, of Culberson's Twitter network—had on the arguments made in the debate over Culberson's claims about the Capuano letter, and, perhaps more importantly, on the expectations that participants in this network had about the network itself and their contribution to it. I will discuss the ways in which the protocol of Twitter affected the development of users identities on the site, and how this development was connected to a widespread belief—one which motivated Culberson's connection between limitations on

his use of Twitter with censorship—that Twitter messages are a uniquely personal form of individual communication. This belief led to a particular program for Twitter networks at the time of this incident that was dependent upon the assumption that, because this communication was personal—that is, because it came directly from individuals, not news services or other organizations—it was more trustworthy than other forms of communication, existing beyond subjectivity or spin. I will show that this belief was largely unfounded, but that it was a significant motivating factor in this debate and was specifically related to the program and protocol of this network.

Programming Twitter

Twitter was originally conceived as a means of replicating the status updates used by bike messengers to communicate with their dispatchers and each other (Makice, 2009). Bike messengers are typically spread out over large geographic areas through which they are constantly moving. In order to make sense of their whereabouts, they frequently check in with a central service to update their status; that is, where they are and what they are doing. The founders of Twitter wanted to replicate this model using the SMS networks available via cellular phones ("Twitter," 2010). In this vein, from Twitter's founding in 2006 until late 2009, Twitter's status updates were prompted by the question "What are you doing?" However, like many networks, the initial intentions of Twitter's creators were not necessarily what programmed the primary use of this network. When Twitter first entered the consciousness of computer users, it was primarily used as a means of notifying others about an individual user's activities and/or whereabouts. Twitter first appeared on the national stage in 2007 at the South by Southwest Interactive

(SXSW) conference in Austin, Texas. It was there that Twitter first gained a critical mass of users, as thousands of conference attendees—a tech savvy group who often use the conference partly as a means of discovering new technology services—embraced Twitter as an effective means of mobile communication. The service experienced its first period of growth during this time, and those early users were frequently similar to the SXSW group: they were early adopters, users who were used to embracing new technologies.

Early adopters and programming. As Twitter continued to grow in 2007 and 2008, those who did not share the same need or interest in notifying others in their geographic space of their immediate whereabouts began to experiment with other uses for the network. Rather than exclusively posting about what they were doing, users began to share news and other information with their followers, or they used Twitter simply to chat, just as many people do with SMS. As a result, the Twitter network became something more than it was originally intended to be—although that intention remained part of the program—and was programmed by early adopter culture; that is, technology users who quickly embrace and champion new services. Consequently, when politicians like Culberson joined Twitter during this period, the community typically accepted them as being like-minded early-adopters. This acceptance appeared to transcend political differences among many users. For example, Culberson, a Republican, was praised by many Twitter users for his technology use, and this technology use was often set against his Republicanism by these users. Consider the following messages that appeared on Twitter from July 6–8, 2008, all of which were sent by Culberson's followers:

> @johnculberson Bravo on the Twitter and Utterz use. You're setting a

good example for Republicans and political leaders.

@johnculberson and they say the Republicans don't understand technology! That's outrageous!

I'm not a republican, but I'm with @johnculberson on this one. Stop dems from stopping social media used by our elected officials.

While these users supported Culberson, this support is presented in opposition to his Republicanism. As the second message points out, "they say the Republicans don't understand technology," and the author of the last message expressed support for Culberson in spite of his Republicanism. These messages suggest that, for these Twitter users, being a Republican is antithetical to being technology-savvy, or, in the last case, pro-technology use. Additionally, there are messages in which the senders express their surprise that Culberson, as a Republican, supported government transparency and the right of representatives in Congress to use Twitter:

@johnculberson A Texan Republican fighting the good fight for the right to Free Speech. Times must be really changing. Good work though :P

This surprise is registered in the suggestion that "times must really be changing" if a Republican like Culberson is able to "fight" for "Free Speech."

Bi-partisanship through shared goals. These messages suggest that there was bi-partisan support for Culberson on his Twitter network. While many users supported Culberson because of political similarities—a large group of Culberson's followers supported his political and ideological viewpoints—others expressed support based on the perception that he was, if not entirely tech-savvy, an early adopter who was eager to

explore new technologies. Within this data set there is often a clear presupposition that Republicans aren't as interested in new technologies, and, further, that Republicanism is somehow antithetical to unfettered speech. While Culberson doesn't specifically say so, it seems safe to assume that he didn't feel that his political party affiliation was some sort of detriment to his ability to use technology or support free speech. These impressions are quite simply stereotypes, and it is likely that Culberson's defiance of these stereotypes led to his messages attracting the attention of Twitter users who seem to be, at the very least, ideologically opposed to Republicans or political conservatism. At this early stage in the debate—most of the messages above were sent within seven hours of Culberson's tweet claiming that that he was being censored—it appears that Culberson's interest in technology and the early-adopter culture of Twitter, both moves that were part of the program of Twitter at the time, supported his trustworthiness, but also helped promote his message throughout the network.

The fact that Culberson defied the stereotypes of some Twitter users does not suggest that he himself was above applying stereotypes to others. Returning to Culberson's initial tweet about the supposed censorship of his Twitter stream, it becomes clear that he did some labeling of his own, and his choice of language played a crucial role in setting the tone for the ensuing discussion.

> I just learned the Dems are trying to censor Congressmen's ability to use Twitter Qik YouTube Utterz etc - outrageous and I will fight them

In that tweet, Culberson implicates the "Dems"—a term referring to Congressional Democrats who were the majority party at the time—as promoting censorship of

"Congressmen."

In three posts sent in the early afternoon of July 8, Culberson writes:

> Dem "Supreme Soviet" leadership of House would have to approve every Twitter before I could post it!!!
>
> They want to require prior approval of all posts to any public social media/internet/www site by any member of Congress!!!
>
> Before I could post a Tweet I would have to get approval of the twits that run the House!

These posts contain a number of inflammatory claims. Culberson begins by comparing the Democratic Leadership of the House to the "Supreme Soviet," claiming that that leadership would require approval of " every Twitter before I could post it!!!" In his next tweet, Culberson expands on and clarifies this claim, stating that the House Leadership is seeking "prior approval" of any content that any congressperson posted on "any public social media/internet/www site." In short, he accuses them of creating new rules designed to limit the freedom of Members from being able to use Twitter and the other social media sites he frequents, and frequently refers to in his tweets.

For example, this was not the first time that Culberson used the term "Soviet" to describe the House leadership. On June 7, 2008, he wrote to Twitter user stereogab that "The legislative process used by Pelosi/Hoyer et al is pitch black or opaque much like Soviet Union," adding that this process "is the deadliest danger." Similarly on June 17 he wrote to nedb "No one knows since Pelosi and the Supreme Soviet leadership work in secret, but I hear the bill also has Webb GI Bill, which I support." On June 18, 2008, he

wrote in reply to Meryl333: "Read my posts at the end of that article. I put careful thought into them detailing and proving Pelosi's Soviet style autocracy." In these examples, he continually evokes the "Soviet" label in connection with the Democratic leadership of Congress, suggesting that in the space of his 140-character Twitter posts he is able to "detail" and "prov[e]" the similarities between House Speaker, and Democrat, Nancy Pelosi and "Soviet style autocracy."

Trustworthiness. A crucial issue for this debate—as well as for practically all online communication—is how trustworthiness can be established in digital networks. Particularly on Twitter, the limited textual resources of the site encourage users to rely on an interesting mélange of trustworthiness indicators that extend beyond, but in conjunction with their individual messages. That is, because the bandwidth of Twitter messages is so constricted, users must rely on other means to establish who on the site should be believed. As we have seen in the responses of some of Culberson's followers, the tendency of an individual user to send certain types of messages—such as constantly referring to "dirty Dems"—is one indicator of that user's trustworthiness for other Twitter users. However, we have also seen that these tendencies can be counterbalanced by other areas of common ground, and that they can also be embraced by others who share similar preconceptions. The restrictions presented by Twitter's 140-character limit result in Twitter interactions being embodied in unique ways, therefore providing the site's users with unique experiences in their interaction with it.

First, Twitter interactions are fundamentally asynchronous, in that users can write and respond at different times, allowing for the potential of real-time conversations.

Further, they are fundamentally personal, as individuals speak directly with other individuals. However, unlike other real-time, personal communication, Twitter interactions are structurally limited. They are conducted exclusively via text—although, due to the link structure of the web, users can also link to other forms of media housed outside the network. This 140-character limitation has a significant effect on Twitter communication, limiting the type of messages that can be shared to only those that can fit in this space. While this limitation has a number of practical effects on Twitter communication, it also affects the way in which Twitter users establish trustworthiness on the site. Whereas in longer-form writing, users would be able to demonstrate their knowledge of a topic, their argumentative ability, or their humor or graciousness as a means of establishing a likeable or open persona, on Twitter the limitations on individual messages can hinder traditional means of achieving these goals.

Rather, Twitter users must rely on the stream—that is, the tweets over time—and the Twitter profile page to achieve these goals, and these structural means of establishing identity on the site are often supplemented by references to offline identity markers.

Twitter stream. The blog-structure of Twitter leads to users' online personas being a function of their long-term interactions on the site. Because of the size limitations on Twitter messages, the value of Twitter is frequently found not in individual messages but rather in the accumulation of messages that appear in a user's Twitter stream over time. As Syverson (1999) has demonstrated, even in the apparently disembodied conversations that occur online, the physical features of the offline world are frequently referred to by writers online. Offline identity markers are one way that users establish their

trustworthiness online. These markers can range from something as innocuous as describing offline behaviors, such as Culberson's post on July 10, in which he describes himself "drafting letter asking that [congressional] rules exempt all Internet/social media posts of video/photos/text since no diff from an op ed/newsinterview [sic]," a message that establishes his continuing work on this issue. Additionally, Culberson used references to his access to restricted areas and powerful people to establish his authority, such as when on July 8 he informed his followers that he was sending messages from the floor of the House of Representatives, or on July 14 when he tweeted that he was "on a bus w entire Texas Cong [sic] delegation on our way to private reception w Pres Bush," later adding that he had sent the first-ever tweet from the Oval Office. In addition to these descriptions of Culberson's physical location, he referred more than once to the technological devices he used to connect to Twitter, such as in this post from July 10: "breaking the rules Twittering w [sic] a Blackberry and Qikking w [sic] a Nokia." Occasionally, he noted the way in which these devices limited his ability to communicate, as when he stated he "had major technical problems w [sic] the Nokia95 sync w [sic] Qik" on July 14. While these types of messages are common on Twitter—as previously noted, at that time, Twitter prompted users to post an answer to the question "What are you doing?"—savvy users reveal personal information only for a purpose, and Culberson's status updates all served to establish his identity on the site as a technologically adept maverick who was bucking Congressional rules in order to fight for transparency, that he was a hard worker, and that he was powerful and had access to powerful people.

Profile pages. One of the most common ways in which users establish their identities on social network sites is through the use of the profile page. Profile pages are one of the defining characteristics of social network sites (boyd & Ellison, 2007), and, as such, they have become one of the main features by which users perform their online identities. For example, boyd (2008b) has noted that her inadvertent choice of a profile image on the social network site Friendster led to her being identified by other Friendster users as a "Suicide Girl," or an avatar from the goth soft-core website of the same name. Users of social network sites like Friendster rely on profile features to generate their opinions of fellow users, and Twitter is no exception.

During the time period covered by this conversation, multiple users referenced an image associated with Culberson's profile: while not his personal profile image, the image appeared in the background of Culberson's Twitter profile. The image was a daguerreotype of five cowboys from Texas. Here is how Culberson described them in a series of messages sent shortly after midnight on July 8, 2008:

> The five young Texans in the image on my background are from Co C of Terry's Texas Rangers - it is my favorite historic photo of Texans
>
> The star in the foreground is also from my collection: 4th Texas regiment in Hood's Texas Brigade - the most famous Texans in the Civil War

In response to an inquiry from a follower in the early morning of July 9, Culberson elaborated further on the image:

> I am a big believer in the 10th Amendment & letting Texans run Texas - I like their friendship, personality and the Lone Stars on their hats

This image clearly seemed to have a personal connection for Culberson. The image of Texans coming together under the "Lone Star" resonated with him, and he connected it to the idea of Texas independence. It is likely that this image was connected in Culberson's mind to his perception of himself as a rebel, someone who will "break the rules" by flouting the (perceived) prohibitions against Twittering by members of Congress.

In short, Culberson used his Twitter messages and profile page to establish an identity for himself, one that directly countered the identity he attempted to create for the "Dems" in Congress. Where the Dems were for secrecy and wished to restrict open communication, he was for transparency and freedom of speech. Where they were like the "Supreme Soviet," he was like Texas freedom fighters. These means of positioning himself were effective: while many Twitter users disagreed with his take on the Capuano letter as well as his depiction of House Democrats, few questioned the image he created of himself as a rebel or doubted his dedication to open government and free speech. Because he so effectively established this identity on the network—essentially, because he was able to program the network in this way—his dedication to these issues was rarely questioned throughout the controversy. Many users who didn't share Culberson's ideological background were willing to engage with him on the network because of the deference of the network towards early adopters. Similarly, by being willing to engage with other users about the controversy—and, as we shall see, change his mind—he was able to retain the part of his network that valued the give-and-take of communication on the site.

Networks of Personality

Culberson's Twitter network—that is, those users who follow his messages—was composed of both those who generally support him politically and those who do not. Davidr's comment about Culberson—"every message from him is about those dirty dems. not what i want from any MOC [sic]"—suggests that davidr held a different ideological viewpoint, and, in the current partisan political climate in the U.S., this fact might seem confusing. Why would a user of a social network site want to follow someone of whom they are as critical as davidr is of Culberson?

Unlike other social networks that require two users to both agree in order for them to become friends, or make a connection between their accounts (boyd & Ellison, 2007), Twitter allows its users to create asynchronous connections. Twitter networks are ad hoc affairs, often organized around individual personalities. That is, a user can follow another user without that second user following her back. On networks that require reciprocal friendships, it has been noted that the majority of users' friends tend to be people with whom the user has an offline connection; people the user knew in high school or coworkers, for example (boyd & Ellison, 2007). However, the protocol of asynchronous connections on Twitter encourages users to create connections—many of them one-way—with users with whom they might otherwise have no offline interaction. Therefore the networks that form out of these connections—in this case, the group of users following Culberson—are comprised of people who may have very little in common, other than their interest in following Culberson's posts. This leads to the situation seen in davidr's message: users engaging in debate with each other over Culberson himself,

rather than the message he is ostensibly trying to communicate. Because participants in the network were united by the interest in Culberson, Culberson was—at least at this early stage of the conversation—the main topic of interest.

While negative reactions like davidr's were not the norm for this early part of the discussion, they appeared more frequently as it developed. The delay in this criticism suggests that Culberson's audience acted on a presumption of goodwill. Initially, Culberson's claim wasn't subjected to extended, overt criticism. Rather, users tended to either immediately accept his statement as truth, or to ask for verification. As we shall see, these questions suggest that clarification plays a significant role in Twitter knowledge making. Twitter's structure is dialogic, in that it *requires* give and take between individuals to arrive at conclusions about topics that are difficult to address in sub-140-character increments. Unfortunately for Culberson, because his followers consisted of both like-minded individuals and those who disagreed with his views, his use of stereotyped language elicited a strong negative reaction from those who did not share those stereotypes. However, we have also seen that those same users may harbor stereotypes of their own, and these stereotypes may conflict with those of Culberson and some of his other followers.

Outsider status. Another key way in which Culberson tried to establish his identity or ethos on the site was by confirming his status as a rebel who was willing to challenge rules that might be considered unfair. In a post on July 10, Culberson highlighted his rebel, outsider status, writing, "We are voting - I am on the House floor now breaking the rules w this live Twitter post." This post was followed by a number of

posts from Twitter users who congratulated him for this behavior and offered support for Culberson's move. Specific shows of support came from users like Leslieann44, who wrote, "we support you! go go go!"; CherylSmith999, "You renegade you!"; and kvetchingeditor, who claimed that Culberson is "above the law! Look at him stand up for live Twittering in the House :D". Other commentators asserted Culberson's right to tweet by connecting that right to the right of free speech, as Boehner (Boehner, 2008) and Culberson himself had done. For example, mattress asked "what are the penalties for you exercising your freedom of speech?" and nedb states "Rules are for small minded people who have no ethics or clues. ;)". These messages of support were also accompanied by more reserved claims as well as critiques such as when Meryl333 wrote "Why stir up a fight when issue isn't even clear?"

These characteristics—the early adopter culture, the bias of some of Culberson's followers as well as his own bias, his status as a "rebel"—are all aspects of the programming of this network. By presenting himself as a rebel, and identifying with Twitter's early adopter culture, when this issue presented itself, Culberson was positioned as a champion for the rights of members of the House of Representatives to use social media and for free speech in general. Further, by explicitly making the program of his personal network the unearthing of Congressional activities for everyone—right or left—to examine, or, as he put it, to "focus on sunshine & freedom & creating open access rules for future Congresses," he was able deflect attention away from his use of stereotypes, presenting them as a temporary distraction from this main program. At this point in the analysis, the characteristics of this program can be summarized as this: it was

a network comprised of a loosely knit group of individuals who did not necessarily share Culberson's political outlook or views. Rather the locus of the group is Culberson's status as a member of Congress dedicated to openness using what was then a cutting-edge technology that had not yet been adopted by the mainstream. It is this area of common ground that united the participants in this discussion, regardless of their opinion of Culberson or his arguments.

Communication "straight from the source"

At 2:01 p.m., Culberson posted a comment about the nature of social media that shows up more than once in his stream: "Gutenburg [sic] made us all readers, Xerox made us all publishers and the Internet/Gridnet makes us all broadcasters & truly free people," noting in his following message that the first "2/3 of that statement was Buckminster Fuller" while the "last 1/3 was me." Here we see another idea that united Culberson and his Twitter followers, both those who agreed with him politically and those who didn't; namely, that Twitter represented a revolutionary form of communication. Culberson apparently had no problem with the Franking Commission monitoring his mail or with the fact that he could only send certain kinds of messages via his office telephone. Like the introduction of television to the House (Franklin, 1992), Twitter's status as a new form of communication gave it a special prominence among communication mediums. Most importantly, it placed the user in a unique relationship with technology, encouraging both a connection with the medium as well as the communication it was mediating. Having previously enjoyed a period of unrestrained freedom in using Twitter, when that freedom was threatened Twitter users like Culberson

didn't associate this threat with the long list of existing regulations governing the speech of elected officials. Rather, it was perceived by other Twitter users as an attempt to silence an entire sector of individuals who use this medium to communicate with each other.

A corollary to the claim that Twitter has a unique status as a form of communication, and one that is frequently repeated during the conversation over Culberson's censorship claim, is that Twitter is essential to the congressman because it allows him to communicate directly with the public, rather than through the news media. This direct communication was presumed to be superior because it eliminated media bias from the equation, or, as levibethune put it in a Twitter message sent on July 10, "what @johnculberson is working toward right now could allow for a update system with no hope for mass-media spin. straight from the source." Culberson himself reiterated this position, replying to levibethune, "@levibethune Bingo - that is my goal -We the People looking into every dark hole in Congress & and a true no spin zone all over DC." A persistent theme of Culberson's in the conversation is how the source of a piece of information—who reports it, what technology delivers it, the medium in which it is presented—affects the truth value of that information. Consider levibethune's comment. What this user suggests is that Culberson's use of Twitter would prevent the "mass media" from spinning what he said, because Culberson, via johnculberson, could communicate directly with the public. As we shall see in the discussion of resonance and switching, however, even though johnculberson could talk directly to the public, this didn't prevent the media from having a significant impact on how the debate unfolded,

and the fact of his access didn't result in all relevant participants, such as Representative Capuano, being given a voice in the debate. Levibethune's second claim, that Culberson "is working toward…a system" that provides communication "straight from the source," is perplexing, given that Culberson, like all members of Congress, could communicate directly with the public in a number of ways, most notably through his personal congressional website, www.culberson.house.gov. What is intriguing about this statement is that levibethune and a number of other Twitter users *thought* that it was true.

Culberson, however, added to levibethune's statement, suggesting that Twitter offered more than just a direct connection for him to speak to the public. Rather, he wrote that his "goal" was a "true no spin zone all over DC." Significantly, Culberson himself was later accused of spinning the facts of the incident by misrepresenting Capuano in his letter and overhyping the "restrictions" being placed on him by CHA regulations. The fact of this accusation indicates that Twitter doesn't represent the eradication of spin, but rather the replacement of one kind of spin for another. Of course, writing and communication theorists would find this result unsurprising: all communication, due to its nature as communication, is inherently subjective, and therefore a form of spin (Derrida, 1988). Evidence of other Twitter users supporting the conclusions that Twitter messages are immune from spin and that getting information directly from appears throughout the exchange. Two typical examples would be this one from georgedonnelly, "I wish more elected office holders would use social media," and this message from batterista, "@johnculberson Fight!!! Lots of bloggers and reporters here that I'm sure will help blow up the awareness on this issue!" When users did question Culberson, those

questions were primarily instances of readers seeking more information about Culberson's claim that the "Dems are trying to censor" his use of social media. Culberson's respondents asked him which individuals were behind the censorship effort and if he could point them to any documents substantiating his claim. Overall the messages were fairly positive. While further clarification was desired, at this point in the discussion not many of Culberson's respondents questioned or criticized his claims. That is, in general, they accepted what he said because it was "straight from the source"; in other words, because he was a representative who had access to specialized information, his information must be accurate. In fact, only two messages on July 8 can be interpreted as being critical of Culberson. The first is by user maslowbeer, and the second was a reply to this first message by davidr:

> maslowbeer: @johnculberson can you substantiate that claim? Where did you hear this?
>
> davidr: @maslowbeer thanks for calling @johnculberson on it. every message from him is about those dirty dems. not what i want from any MOC.

Clearly, davidr interprets maslowbeer's message as a challenge to Culberson, rather than merely a request for more information.[2] Additionally, davidr takes issue with Culberson's seeming disparagement of Democrats. On its surface, it's not clear that maslowbeer's message is critical of Culberson. As with many other messages, this one from maslowbeer appears to be a mere request for more information to support Culberson's

[2] This exchange also shows that at least some participants in this discussion are monitoring the messages directed towards Culberson by other Twitter users.

claim. However, davidr seems to interpret this request as a challenge to the truthfulness of Culberson's claim.

A similarly critical message comes from user kdavidian in this exchange (usernames of the message authors are placed at the beginning of the message):

> mmealling: @johnculberson censor twitter/qik? Just tell me who to call! Apparently someone has a problem with sunlight?
>
> kdavidian: @mmealling Do you read posts by @johnculberson as blindly partisan, as some might?
>
> mmealling: @kdavidian as far as @johnculberson's last remark, the Democrat Party is the party in control so the point is valid (as well as partisan)

Like davidr, kdavidian's criticism isn't directly addressed to Culberson—it doesn't begin with "@johnculberson," which at the time wouldn't have directed the message to Culberson's reply stream—but is rather addressed to a different user, mmealling. Similarly, kdavidian's response is directed to mmealling, whose message, like that of maslowbeer, isn't critical of Culberson. In fact, it is explicitly supportive of Culberson.

The complaints by davidr and kdavidian were connected to Culberson's use of language, but, perhaps crucially, both addressed Culberson's authority as it was connected to the claims he makes. Neither critique directly addressed the accuracy of Culberson's claim. Rather, they addressed its accuracy implicitly through the lens of his statements about Democrats. Davidr takes issue with what davidr perceived as a complaint about "dirty dems." While Culberson doesn't use this language in his tweet, his

Twitter stream prior to the tweet does contain negative portrayals of Democrats, particularly House Speaker Nancy Pelosi. In short, early on, there was very little effort made to question the factuality of Culberson's claim, other than to critique him on partisan grounds, further evidence of the widespread acceptance of the idea that Culberson must be a factual source because of his political position.

While it is worth noting that levibethune and Culberson's claims that communication on Twitter can somehow avoid the effect of spin can be demonstrated to be false, rather than merely pointing out this fact it is more interesting to consider why these claims were considered true—and left essentially unchallenged by other users—with regard to Twitter. Twitter is no more "straight from the source" than other forms of web communication, nor is it immune from the subjectivity of authors and readers. Yet, why did these Twitter users assume that these claims were correct? More specifically, are there features of Twitter—its network and platform—that suggest it provides a unique means of individual interaction that is somehow less removed from our experience of other individuals? Or that it has a unique or more complicated connection to the subjectivity of language than do traditional media?

One answer might be related to the restrictions placed on individual Twitter messages. Because Twitter requires users to make an extra effort to establish online personas, they are therefore more highly invested in the medium as a source of "free speech." The less that a person's sense of identity—or what s/he can control or perceives as part of the self—is connected to a medium, the less that medium seems to be personal speech in need of protection. Consider the election mailings of representatives that are

regulated by the Franking Commission; such impersonal communication was highly unlikely to be afforded with the same sort of emotional connection to free speech as was Twitter. It is at this level that Twitter appears to be an important forum for personal speech. In one sense, Twitter is a counterpart to traditional conversational speech, yet it is conversation that derives from its public network the reach, and occasionally the weight, of other forms of broadcasting. Numerous professional media organizations use Twitter as a means of sharing news reporting, and the open model of the site presents that information in broadcast form. In short, Twitter is a personal medium, but it is also a broadcast medium. It is as if each Twitter user had his or her own printing press. Because each tweet was published for everyone to see, the site was considered by its users to be a vehicle of personal and public expression. Personal because each individual could publish their own messages, and public because anyone could access and comment on them. This combination renders digital media like Twitter a strong sense of both intimacy and reliability. For these reasons, when someone like Culberson claims he is being censored, users ask themselves "Why would he lie?" He published that claim under his own name, from his own account, thereby lending it his authority, both as an elected official and through his programming of his Twitter network. As such, Twitter users were quick to accept this message from one of their own, and the threat that one of their own could be silenced in this way was particularly useful as a rallying cry.

It wasn't only Twitter users that initially accepted Culberson's claim. When the story was carried in the professional news media, it was often presented as Culberson framed it in his Twitter messages. This is the case in a Fox News piece on Congress's

supposed censorship attempts (Pergram & Simmons, 2008). When the issue of Congressional media censorship was first addressed by Rep. Boehner (2008) Culberson's name wasn't mentioned. However, after posting this claim on Twitter, Culberson became the face of Republican opposition to this supposed change, both in blog posts on the subject, and in the mainstream media (Falcone, 2008; Noyes, 2008b; O'Brien, 2008). For instance, the *New York Times* article on the topic features Culberson's tweets about the issue as the lead to the story (Falcone, 2008). Additionally, this article repeats one of Culberson's primary interpretations of the Capuano letter: that the recommendations it contains would be new restraints on Congresspersons. As the author puts it, Capuano's proposal "would impose new guidelines on legislators who post videos on external Web sites like YouTube." In short, the combination of Twitter's personal communication and broadcast qualities led to the information being shared on the site being invested with the aura of direct, objective information, even thought in significant cases this was not, in fact, true.

Protocol

I have already discussed a few of Twitter's application protocols: that is, the rules that determine how Twitter messages are sent and received. The 140-character limit on all tweets is one such protocol, as was the way in which @replies were routed to Twitter users in 2008. In addition to these system protocols, Twitter has developed what we can call social protocols; that is, protocols that aren't hard-wired into Twitter but come from the emergent expectations on behavior produced by Twitter users. As I suggested in the previous chapter, these two types of protocols are the digital network's equivalent to the

focus of delivery on how to best use the body in communication. System protocols like Twitter's 140-character limit can be thought of as the equivalent of limits that are placed on the body. No rhetorician would emphasize a point in his or her speech by leaping fifty feet in the air, no matter how effective such a display might be, because such an action is not normally physically possible. Additionally, it would not be recommended for a speaker to switch his or her voice to falsetto when discussing a weighty topic because such a display would violate cultural norms for what is considered serious and most likely undermine the speaker's goals.

It is nearly impossible to discuss Twitter and how it is used without discussing its protocols. For this reason, many of these protocols have been frequently mentioned in other sections of this chapter when they relate to the ways in which Twitter processes and shares its users' communications. In this section, I will briefly discuss Twitter's social protocols, those expectations on the behavior of users that aren't written in code but are generated socially by users. While social protocols didn't have as direct an impact on the network as the programs of the various networks involved and the resonance and switching between networks, they were apparent at various moments in the unfolding of the network.

For example, as users questioned Culberson's interpretation of the Capuano letter, he responded primarily with a single message, which he sent individually to multiple Twitter users by way of @replies. Of the seventy-two messages Culberson posted to Twitter between 5:45 and 12:09 p.m. on July 8, 2008, at least twenty-three of them are some variation of this message:

@shelbinator Look at page two - note each Twitter etc must meet

"existing content rules and regulations" that means prior approval/rewrite

Additionally, Culberson sent the following message to other users six times:

Before I could post on an outside website like this the site must meet

comm guidelines, must be a fed disclaimer & my post must be approved

Apparently, Culberson was unaware that Twitter allowed @replies to a particular user to be seen by all users following the sender. Prompted by a message from Culberson, in which the congressman apologizes to another Twitter user for sending out the same message twice, jamarch pointed out to Culberson that his @replies were visible to all users, after which Culberson largely discontinued this practice. He did, however, send out one more copy of the second message. In addition to sending out multiple copies of the same message to Twitter users, on the evening of July 8 and the early morning of July 9, Culberson posted comments on at least thirteen external blog posts about the incident, and all of these comments consisted of essentially the same text. As was the case with the repeated Twitter messages, Twitter user technosailor pointed out to Culberson that this behavior may alienate some users, writing in a message sent in the early morning of July 9, "you should vary your comments a bit from blog to blog … Someone's likely to call you on that." Culberson soon replied that he was "Tired & need[ed] sleep," stating that he "wrote a good explanation & will get to bed sooner by pasting it."

On the one hand, Culberson's use of Twitter in this way was affected by physical constraints: as he said, he was "tired & need[ed] sleep," so he attempted to save time by not varying his messages. In a different situation—for example, a press junket, where

someone speaks to a number of different media outlets in succession—this behavior would be acceptable and perhaps even expected. This is evident in his interviews with media sources outside of Twitter (O'Brien, 2008; Pergram & Simmons, 2008), when Culberson frequently used the same talking points, one of which was an analogy to King Cnut, a monarch who thought he was so powerful he could command the tide to go back in and it would obey him ("Cnut the Great," n.d.). While no one complained about this incident of repetition, which would have been apparent to anyone following the story in the media, Culberson's similar repetition on his Twitter profile and blog sites provoked negative feedback from his followers. While it was acceptable for Culberson to repeat messages to news organizations, this was not part of the social protocol of Twitter, and it took some time for Culberson to adjust to it.

Similarly, Culberson sent a number of inadvertent messages to the network. These messages consisted of nonsense letters and were referred to by some followers as "butt-twittering." Additionally, he at one point posted five tweets to his account indicating that he was "Qikking." These messages were likely generated automatically by the Qik streaming video service as Culberson lost a phone signal and restarted streaming with the service after regaining that signal. In both cases, other users in the network commented on the inappropriateness of these messages. However, it is unlikely that they had a large effect on the network, seeing as they were regarded by those who mentioned them to be obvious accidents.

Switching and Resonance

One major feature of Twitter's low bandwidth for individual messages is that

users must frequently refer to outside sources in Twitter discussions. While the program and protocol of the network affected the kinds of messages that appeared in the network and the reactions to those messages by users, it was the switching behaviors exhibited on the network and the resonance achieved with other networks that provided the key connections between this network and others, enabling the wide reach of Culberson's message. These outside sources were a crucial component of the discussion of Culberson's claims. His claims—and the supporting and contrary claims of his followers—didn't occur in a vacuum, but rather both influenced and were influenced by outside networks.

As I have noted, Culberson was not the person who first made the censorship claim about the Capuano letter. The claim was initially made by Boehner (2008). However, after an initial response to Boehner's claim in the Beltway media (Noyes, 2008a), Culberson soon became the primary source for reporters wishing to discuss the proposed change in CHA rules (Falcone, 2008; O'Brien, 2008; Pergram & Simmons, 2008). In fact, in the *New York Times* story on the case, the reporter begins his article with, "It began with a twitter from one of Capitol Hill's best-known technophiles," even though this debate had actually begun with Boehner (Falcone, 2008). In this section I will argue that this was largely due to the reaction of bloggers (Highsmith, 2008; Masnick, 2008; Zeigler, 2008) and other influential tech commentators to the Twitter network generated by Culberson. The switching that enabled these connections thrust Culberson forward, for good or for ill, as the Republicans' primary spokesperson on this issue. Further, contrary to the assumptions of many members of the Twitter network,

Culberson's opinions didn't come "straight from the source," but rather relied on complex connections to outside networks in order to lay out arguments and further establish credibility.

Capuano Letter

The most obvious connection made between Culberson's network and an outside source was the use of the Capuano letter. A key point in Culberson's interpretation of the letter was that it was suggesting a new rule, or a change in the rules existing at that time, that would have restricted the Congressman's social media use. Culberson noted on Twitter that Capuano's suggestions would result in "No more live Q[i]k videos - no more live Tweets from the House floor or anywhere in the Capitol - no more www communication w/o prior approval." In other words, he appeared to argue that this communication was previously allowed, but that the new rule would change the existing situation. Additionally, Culberson asserted that this new rule applied to all social media and Internet communication, and, finally, Culberson asserted that the rule would require him and his colleagues to get *prior approval* of his posts before posting them online.

I include this extended discussion of Culberson's interpretation of the letter because of the extreme importance that this document had in the discussion, not just to Culberson, but to his followers as well. This was particularly the case because, after initially supporting his claims, a large number of participants in the network interpreted the letter differently than Culberson did. Culberson chose to announce the "censorship" attempt without reference to a source for this attempt, either in the form of a document, or as a simple citation. As I have shown in my discussion of the initial response to

Culberson's message, while many of his followers showed support for his position, many of them also called for some evidence to support this accusation. Whether or not Culberson would have eventually provided this evidence on his own is impossible to say. However, he clearly seemed to believe that the letter would bolster his position. That is, that it would provide proof that his claims were true, therefore spurring his followers to demand that the rule be reversed and thereby stopping the "Dems" from perpetrating this alleged censorship.

The varied positions that this letter assumes in the conversation—as a validation of Culberson's claim, or a call to action—seemed to further undermine the status of Twitter as a place where information can be acquired "straight from the source." While Culberson used Twitter as a means of sharing his thoughts directly with other users, he also found it necessary, either as a sign of his trustworthiness or to strengthen of his argument, to link to an outside source that he felt verified his claims. In doing so, he connected the digital network created by his initial message to an outside network, one that he believed would lend further credence to his argument. However, because of the leap to this network, the information was no longer be "straight from the source"; instead it contained information one step removed from the source, Congressman Capuano. While some users interpreted the letter in a favorable light, Capuano's interpretation of what the letter meant or his interpretation of it is absent from this network. However, this interpretation does appear in news reports and blog posts linked to in the conversation (Falcone, 2008; Noyes, 2008a). While it is possible that the letter, or the issue, might never have received such widespread attention without Culberson, it is clear that getting

information "straight from the source" is limited to only those sources that can or are willing to share information with a particular network, and that this belief is based on the assumption that those sources do not themselves dissemble or spin their information.

Switching

Due to Twitter's size limitations, Culberson uses a number of outside sources in making his argument. These sources were primarily not of Culberson's own creation, such as his website, but rather blog posts of those following the event and reports from media outlets. After Culberson posted a link to Capuano's letter with his commentary, his followers almost immediately began to analyze that commentary. Rather than rely on his interpretation, bloggers began to analyze the letter as well, while other Twitter users provided their own interpretations of the rule. However, the blog commentaries that appeared immediately after Culberson shared the letter had a tendency to support Culberson's interpretation. At 5:39 p.m. on July 8, Twitter user debaser posted a link to a blog post and claimed credit for authoring it (Zeigler, 2008). That post, titled "Is the House going to limit the free speech of its own members?" appeared on www.thebivingsreport.com, which describes itself as "a source of news, insight, research and analysis on the web-based communications industry" authored by "employees of The Bivings Group."

While this post contains no new information or analysis, it is interesting for a number of reasons. First, it was the first message in the stream since Culberson's initial censorship claim that includes a link to an outside webpage. While it isn't especially noteworthy that the stream contains few links before this point, it is somewhat surprising

that Zeigler's post contains a link to a press release on Culberson's official website that describes Culberson's interpretation of the rule ("Breaking news: Free speech under attack," 2008), although it didn't initially contain a link to Capuano's letter. This press release reprints in full the press release from House Republican Leader John Boehner, criticizing Capuano's proposal (Boehner, 2008). Yet before this point neither of these documents is mentioned in the stream, by Culberson or anyone else. Despite the absence of any references to Culberson in Boehner's press release, Zeigler clearly sees Culberson as the source for the information about the rule, as well as the primary Republican opposition to it. Interestingly, while the press release on Culberson's website cites Boehner as the source for the information, at no point in Culberson's Twitter messages contained in the data set does he mention Boehner or suggest that he received his information about the issue any other way than through first-hand means.

In his post, Zeigler points out that the only sources he has found on the issue have come from Culberson, a claim that ignores Boehner's press release; while Zeigler quotes at length from this press release in his post, he attributes it to Culberson. Finally, rather than providing Culberson with general statements of support, as some had done up to this point on the Twitter stream, Zeigler appears to be waiting for some verification from outside sources that Culberson's account of the censorship is accurate. This reaction suggests the way in which the Twitter network influenced the overall perception of the event. While the Twitter network was clearly connected to outside networks by Culberson and followers like Zeigler who supplement it with additional information provided in other forums and outside sources of verification, the Twitter network itself

became a primary source for the news media in covering the story.

Blog opposition. On July 10, Culberson attempted to add support to his position by referencing a blog post on the censorship controversy by another Twitter user, technolsailor. Culberson wrote, "I agree w Technosailor the existing House rule that prohibits this Twitter Qik etc needs to be repealed." Technosailor's post (Brazell, 2008), which was widely linked to and referenced on Culberson's Twitter network, was updated ten separate times, and some of these updates changed the tone of the post. In the original post, the author, Aaron Brazell, condemned attempts to limit Culberson's tweeting as "creeping lunacy in Washington." After praising Culberson and Democratic Representative Tim Ryan, another frequent Twitter user, for using the site to "actively [circumvent] traditional bureaucratic communication lines" by "talking directly to the American people," Brazell then posted a copy of the Capuano letter which he introduced, somewhat cryptically, as "the letter sent to the Democratic House majority leadership to silence this nonsense" (Brazell, 2008).

In the update that Culberson appeared to be referring to in his mention of Brazell's post, Brazell repeated at length in the body of the post a comment Culberson left on his blog. This comment is different from the copy and paste comments Culberson left on other blog posts, but repeated the general argument of those posts. In it, Culberson congratulated Brazell on providing evenhanded coverage of the issue, then claimed that he personally spoke with Capuano and that in that conversation Capuano "confirmed that websites like yours, Aaron, are next," meaning that Brazell's website would have to be vetted by the CHA before Culberson could add a comment to it. Capuano, in interviews

on the topic, denied this interpretation, specifically stating, "We are not currently seeking to address anything other than video—not blog postings, online chats or any other written form of communication anywhere on the Internet," adding that "any assertion to the contrary is a lie" (Falcone, 2008). Culberson, who in the first days of the controversy said that he would interview Capuano using Qik but never did so because Capuano refused to go on camera with him, repeated the claim that Capuano had supported his assertion multiple times, arguing that the CHA did in fact wish to prohibit House Members from commenting on external websites.

Further, in his comment on Brazell's post, Culberson referred to the change as a "new rule," claiming that this rule would require all posts such as his to be "edited and approved by Franking Comm." Following his reposting of Culberson's comment, Brazell then provided a link to a post by Shelbinator that Brazell summarized as being "the voice of a growing number of people who are seeing through what is becoming a charade noting that the rules already exist," directly contradicting Culberson's claim about the rule being new in his comment. In other words, both Shelbinator and Brazell noted that what Culberson was calling a "new rule" appeared in fact to be an existing rule, one of those that Capuano's proposed changes would seek to loosen so that representatives could have more freedom in web postings. Brazell then went on to criticize Culberson for his defiance of these existing rules, encouraging the congressman to not be a "rebel or vigilante" but to obey the rules while trying to get them changed. In short, this post ended up being a somewhat nuanced critique, but this nuance is not present in Culberson's citation of it as support for his position. Additionally, while in his reference to Brazell's

post Culberson writes that he "agrees" that the rule in question is an "existing" rule, he later uses language in other Tweets that suggests the censorship he foresaw would be the result of a "new" rule, rather than a relaxing of the previous rule.

News media. The integration of outside media sources with Twitter in these examples indicates that these networks aren't by nature independent of each other. Rather, networks are frequently dependent other networks for services like extending their reach and establishing authority. The traditional news media served such a role for this network, providing publicity and exposure for Culberson's claim. Media outlets like the *New York Times* and Fox News were supplemented by Culberson's use of other sources like Qik, the online, live video-sharing service.

In a series of posts sent slightly after noon on July 9, Culberson wrote that he would attempt to interview Capuano and Brady on the house floor using Qik, the live video streaming service. Culberson stated that the goals of these interviews will be to get the two to "reassure us they will not censor www or congress," noting that the "instantaneous response" of Twitter messages, along with the live interview, "will defuse this and solve it." He then noted that the Qik videos will allow him to "walk everyone through problem solving in Congress," seemingly emphasizing his commitment to government transparency. In response to these statements, one user, Meryl333, wrote "I worry your interviews will be FOX news snippets," claiming that Culberson is "hardly unbiased" and that his "intent is to embarrass more than inform." Culberson replied that "Mike Capuano & I are friends" and that Culberson's "goal is to fix the problem &stop [sic] the censorship," noting again that he intended the interview to focus on problem

solving, all while repeating the claim that Capuano's changes would amount to censorship. In a general status message sent a few minutes later, Culberson claimed that he "will be friendly and nonpartisan of course." A few minutes later, in response to nsp1r3d's question on how he/she "can…help stop OUR House from finding another way to close its doors to us?," Culberson posted the email addresses of House Majority Leader Nancy Pelosi, Capuano, and Brady to the network.

Culberson, however, never held interviews with Capuano or Brady. At 3:04 p.m. on the July 9, he notified his followers that he had finished an interview with another Qik user, Andrew Feinberg. After this post, Culberson posted another message stating again that he would interview Capuano and Brady on his Qik stream in an effort "to try to solve this." However, his next message notified his followers that he was Qiking a different interview: one with a Fox News reporter (Culberson, 2008). This interview focused primarily on Culberson's use of Twitter and Qik as a representative and only briefly mentioned the current controversy.

Of course, Capuano did address the controversy elsewhere. Falcone's (2008) article reports Culberson as saying "Leadership has told me personally that they will next focus on limiting our access to text, blogs, and other social media outlets on the Internet," leaving off the attribution to Capuano. However, in the article this claim is immediately followed by a flat denial from Capuano. This denial largely repeats Capuano's earlier press release, stating "We are not currently seeking to address anything other than video—not blog postings, online chats or any other written form of communication anywhere on the Internet" (Noyes, 2008a). However, in Falcone's (2008) article, Capuano

adds to this claim the statement that "any assertion to the contrary is a lie." In the next paragraph of the article, Falcone notes that Culberson attempted to interview Capuano on Qik, but that Capuano declined. Falcone found the concept of the interview to be dubious—he places the word in scare quotes—and comments on Culberson's own mention of the technical specifications of his cellphone—"'a Nokia 95 with eight gigabytes of memory,' he boasted." The contrary view to Culberson's "new rule" interpretation is presented as an attribution to House Speaker Nancy Pelosi—"Ms. Pelosi said that the Democrats' proposal would relax rules that prohibit members from posting on sites other than the House.gov domain."

Referring later to the Qik interview he said he would have with Capuano, Culberson tweeted that Capuano, who declined to be interviewed on video, told him that the rule he opposed "will limit Member video posts to approved sites w approved content w disclaimer &." The message ends abruptly at his point, and appears to be continued in Culberson's next two messages, sent shortly after midnight on July 10:

> He [Capuano] said text/blogs/Twitter social media sites next. My analysis correct: we could only post approved content on approved sites w disclaimer

and

> Twitter would be prohibited to Congressmen because We the People are free to post political comments recommending who to vote for or against

These claims, of course, directly contradict Capuano's claim. This part of Culberson's message, which he reports to be from Capuano, is separated from his next two messages,

in which he claims that Capuano supports his analysis of the letter.

Fox News interview. On July 16, sassmo wrote to Culberson "You should tell your TwitFollowers [sic] the truth & offer an apology for misleading us about Dems 'oppressing' your Tweeting." Culberson responded "@Sassmo Current rules 'prohibit (House) members from posting official content outside of the House.gov domain,' Rep. Michael Capuano," adding in an additional message, "@Sassmo Do your research: http://tinyurl.com/5sq7e2." This link was to a Fox News story reporting on the controversy over Culberson's comments (Pergram & Simmons, 2008). Culberson's quote from Capuano is taken from Capuano's original letter to Robert Brady (Capuano, 2008), a quote that was repeated in the Fox News article. This article reports that Capuano's "recommendations have riled Republicans like Culberson, who argue they limit his communications," while noting that Pelosi had claimed that Capuano's "work won't restrict but will rather loosen the rules," and Boehner "has rung alarm bells over possible Democratic-led censorship of the Internet" (Pergram & Simmons, 2008). This paragraph hopelessly muddles the timeline of these protests and ignores the statement about the "existing" rules that preceded it.

In one statement, attributed to Culberson—the text reads "he [Culberson] said," although no part of the preceding statement is in quotations—the authors write:

> Banning video postings by House members also hands the media an advantage they wouldn't have if he were allowed to use new technology to get out his side of the story, beating biased reporters to the punch, he said.

Again, Culberson repeats the idea that his messages on Twitter would be able to counter

media spin. However, this message was presented via the media, which he hoped to beat "to the punch." The authors then relate that

> in a video posted online of his interview with FOX News, Culberson relayed how Capuano got irritated when Culberson apparently tried to get Capuano on camera, but hadn't asked him first. After the video was posted, Capuano ended up receiving a torrent of e-mails and phone calls from Culberson backers.
>
> Admitting he might have jumped the gun by posting the confrontation, Culberson said he apologized to Capuano and pledged not to film him again without his permission.

These details appear to be sourced directly from Culberson. The video being referred to no longer exists on Qik; presumably, if it was ever created Culberson later deleted it.

In his response to Sassmo, Culberson used this quote of Capuano's to suggest that "Dems" were, in fact, "oppressing his Tweeting," contrary to Sassmo's claim—and, it seems, contrary to Culberson's vow to quit making partisan claims about the issue. In a later tweet about the Fox News article he writes "Fox News confirms my anaysis [sic]: Capuano says House rules prohibit all outside, unsanitized posts." It's not clear what was meant here. On the one hand, the portion of the text that would seem to confirm this point doesn't derive its authority from Fox News, as the statement would seem to suggest. It is a direct quote from Capuano's letter to Robert Brady, which had been available for some time, and the implementation of which was clearly in dispute. Second, the second condition he mentioned—"unsanitized posts"—appeared nowhere in either the Capuano

letter or in the Fox News article. In short, it is difficult to see how the Fox News article "confirms" any part of his position, since the only voice confirming that position in the article was Culberson's own.

Clearly, both in the case of blog posts, Culberson's own use of Qik for interviews, and in references from the professional news media, this network did not exist in isolation, nor did it in this case provide some sort of independent, idealized perspective above the fray of traditional media reporting. Rather, it existed in a complicated relationship with these other forms of media, both providing them with information and relying on them for arguments and additional details that could be used to support Culberson's claim about the alleged censorship. When publicly available information, such as the Capuano letter, failed to convince his followers of his argument, Culberson attempted to support it with privileged information, like his discussion with Capuano, but the accuracy of this information was never verified. Thus Culberson relied heavily on connecting his claims with those of others—blog posts, news reports—that he suggested prove his claim to be true.

Conclusion

In conclusion, this case illustrates the importance of program, protocol, switching, and resonance in communications on digital networks. Like the importance of memory and delivery in oral communication, network communications depend on coordination and the technical and cultural expectations that emerge in embodied environments. In the case of program and protocol, the digital network equivalents of delivery, it is clear that the program of the Twitter network in 2008 as a site for early adopters had a large effect

on how Culberson was received on the site. Rather than being immediately dismissed by those who disagreed with him, he was seen as a fellow early adopter, and the goodwill that he inherited from this perception was likely one of the reasons for his followers' initial acceptance of his claim that the House leadership was trying to censor Tweets. Similarly, Culberson established a positive ethos on the site supported by his statements about offline activities and his performance of a rebellious, patriotic personality, all of which supported his initial claim as a defender of free speech. This positive ethos was generated in relation to the program of the network, one that valued Twitter as a source of personal communication. However, when Culberson attempted to use the goodwill generated by the program of his network to argue, in apparent contradiction of the facts, that he was subject to censorship, he undermined his and many of his followers' stated belief that Twitter's value was in providing information "straight from the source." In this case, the real value appeared to be in the fact-checking features of Twitter. Because Culberson's claim resonated with the values of so many Twitter users—the values of free speech and open communication—Culberson was initially able to build significant support for his position. However, this increased attention brought additional scrutiny, resulting in blog posts and news reports that contradicted Culberson's claim. Despite Culberson's attempt to utilize these other sources to support his version of events through switching, this switching was ultimately ineffective, for it merely connected Culberson's claims to counter-claims that seemed far more plausible.

The attempts at switching did demonstrate that digital networks like this one depend on outside networks, both to add meaning and relevance to their posts, as well as

to promote those networks. Contrary to their stated beliefs, Culberson and his followers demonstrated how Twitter relies on outside sources to make sense of events as well as to establish trustworthiness and authority. That is, despite user feelings to the contrary, the network operates according to network rules, relying switchers who are able to connect disparate networks with each other. The true effect of "straight from the source" communication isn't the elimination of biases, but rather the shifting of power within networks away from traditional media sources to individuals who are able to leverage those networks in an environment in which they have a great deal of control over communication practices.

Fortunately, this discussion ended with a good outcome. Under pressure from his followers, Culberson eventually vowed to forgo partisan language in his Twitter messages and to work with Democrats to ensure openness and access for representatives to social media. In the next chapter, we will look at a case that ended less positively, as network effects reinforced a negative outcome in a group discussion.

Chapter 3

"Free Lacy…!": Network effects in digital communication

Introduction

SXSWi

Every year in March, members of the technology community gather in Austin, Texas, for the South by Southwest Interactive (SXSWi) conference. Hosted in conjunction with film and music conferences, SXSWi regularly draws engaged members of the technology community and is considered to be a strong venue for introducing new products, from hardware to software and web services. Twitter received its first major publicity at the 2007 conference, where it quickly caught on with the technologically savvy crowd. Many commentators attribute Twitter's early popularity to its enthusiastic reception by SXSW's plugged-in cognoscenti.

Since its launch, Twitter has been widely, though unofficially, used as a means of communication at the conference. While it is a popular means of sharing information about current events at the conference—parties, popular sessions—it has also been widely used as a means of discussing conference sessions by SXSWi attendees. This sort of "backchannel" discussion is an established feature of the conference, as conference goers frequently provide presenters with passionate feedback about their desires for the panels and what they expect as an audience. The conference organizers have in the past provided specific online chat areas for presentations at the conference, encouraging both panelists and audience members to discuss the panels as they are happening. For these

reasons, backchannel discussions—often consisting of critiques and/or praise of the speakers—have long been taken for granted by conference attendees.

At the 2008 SXSWi, one of the scheduled keynote events was an interview of Facebook founder Mark Zuckerberg conducted by business reporter Sarah Lacy. The interview format is a common one to SXSWi keynotes. Frequently, they pair industry leaders and key technology thinkers who then discuss current topics. The topic of this keynote was Facebook, which had recently been the focus of copious media attention swirling around the attempts of other software makers to buy the service, the question of when the company would go public, and a recent investment by Microsoft that valued the site—which had many millions of users, but limited revenue streams and was thought to be running in the red at the time—at over $15 billion.

This keynote soon became notorious as an example of an audience "revolt" against the speakers. After an enthusiastic opening to the keynote, the audience's mood—and their Twitter comments—quickly soured, as criticism of what was perceived to be Zuckerberg's canned, formulaic responses to Lacy's questions was soon joined by the audience's general dislike for Lacy, who was said to be diverting the conversation away from Zuckerberg and flirting with him. The negative reactions, widely circulated on Twitter for most of the keynote, eventually resulted in a physical backlash by the audience. Members of the audience walked out of the keynote, while others shouted their derision at the stage, demanding to be allowed to ask their own questions of the Facebook founder. Neither Lacy nor Zuckerberg was prepared for the backlash they received from the audience. In an interview given immediately after the keynote, Lacy claimed that both

she and Zuckerberg were completely blindsided by the audience reaction, noting that the audience was laughing along with them for the majority of the interview before they were attacked openly (Gallaga, 2008).

Audience Reactions

On the one hand, the situation facing Zuckerberg and Lacy is very old: that of live performers in front of an audience. Although the format wasn't a traditional speech and didn't have an overt argument to express, the dialogue format that was used has a long history, as does the practice of live performance. In the latter situation, the audience can provide crucial feedback as to the direction in which the conversation is going and how it is being received. Restlessness, demonstrating a lack of engagement via facial expressions or body language, and outright gestures of rejection such as audible critiques and physically leaving the venue are all examples of the real-time feedback that an audience can provide a speaker. Additionally, audiences can signal approval through various means such as applause, bodily and facial engagement, and supportive sounds like cheers. These types of feedback have been part of public forums as long as public forums have existed.

Backchannel. The Zuckerberg-Lacy interview is representative of a trend, namely that the traditional forms of audience feedback listed above are being increasingly supplemented by alternative channels of feedback (McCarthy & boyd, 2005). These channels could be almost any form of communication: audience members whispering to one another, writing notes for themselves or to share with other attendees, and, crucially, the use of digital technologies to share information with both other attendees and those

not physically present at the event. Such channels are often referred to collectively as the backchannel, a term borrowed from the study of speech. In that context, the backchannel refers to "the short utterances produced by one participant in a conversation while the other is talking" such as "hmm" or "uh-huh" (Ward & Tsukahara, 2000, p. 1177). When audience members communicate in private amongst themselves using traditional forms like speaking or notes, speakers have very little opportunity to know what is being said, unless the audience signals that information via one of the methods of audience feedback mentioned above. Networked backchannels are in many cases open to anyone, including the speaker, often in real time. While the use of the term backchannel suggests that the speakers would have access to this networked backchannel, sometimes they do not, or they simply choose to ignore it. SXSWi sponsored its own backchannel for all events, using the chat site Meebo.com, thereby providing an official channel for discussing panel content as well as institutionalizing the practice of holding these discussions. In addition, many SXSWi attendees used Twitter to communicate about the conference.

Physical distance. A further difficulty presented by the situation facing the speakers was the distributed nature of the event. Not only were the speakers presenting in front of a full room of attendees, the event was simultaneously being broadcast to the "overflow" room, a different location at the conference site (although physically located some distance away from the main room) where video and audio of the event was screened live for those who couldn't get in the main room. Additionally, other Twitter users monitored the event remotely by reading the tweets coming from those viewing it live.

To sum up, the speakers, while presenting in traditional ways to a traditional audience, were also being engaged, most likely with their knowledge but without their participation, in a number of other communication networks, from the video projections in the overflow room to the backchannel discussions on Twitter and Meebo. It seems that the speakers were both unaware of and unprepared for the backlash their talk received in these venues, and that they were further unprepared for the way in which those backchannel discussions eventually influenced the overt physical responses they received from the audience. The audience backlash described above is not an event that is unique to the networked age. As long as there have been speakers, there have been audiences willing to deride them. However, what is new is the extent to which the audience at the keynote interview used networked communication technologies to voice their opinions about it and how that communication affected the mood of the audience offline. As I will show in this chapter, these networked technologies played a role in intensifying the audience reaction, allowing for greater connectivity between audience members, and also generating the belief that the audience was reacting with one voice.

Data Set and Data Collection

The primary data for this chapter is a collection of Twitter messages sent during the time the keynote was taking place. 3,562 tweets were captured between 3–4:11 p.m. CST on March 9, 2008. Of those messages, 1,024 were identified as referencing the Zuckerberg keynote address, either by attendees or by others commenting on the tweets of those attendees. This data was gathered by Kee Hinckley using the Twitter API not long after the event (Hinckley, 2008). Out of the entire set of messages, I manually sorted

the messages for individual posts referencing the event. In addition to these messages, my primary reference for the interview itself is the video of the event ("Mark Zuckerberg Keynote," 2008).

"Anatomy of a Mob"

In this section, I will give a brief overview of the messages shared by Twitter users during the Zuckerberg-Lacy interview. This overview will serve as the grounds on which the following analysis will be based.

Before the interview began, initial tweets from the audience were upbeat. Many users noted that the keynote room was crowded, describing it as "packed" or "jammed." One user, bb, wrote: "Thousands waiting for Zuck - 'Every generation throws a hero up the pop charts'," a reference to Zuckerberg's popularity, while user whalesalad described the room as "balls to the wall PACKED!" Eventually, the room where the keynote would be held and broadcast was so crowded that the conference's wireless internet services were overloaded, preventing some attendees from getting online. NewMonarch described the situation as "All the nerds waiting for Zuckerberg have crashed the convention center wifi," while TheStalwart claimed, "it seems like Zuck caused the first internet crash of the event."

An interesting feature of this early portion of the conversation are the comments by those who didn't attend the keynote in person, including conference attendees viewing the keynote from the overflow room as well as comments from non-attendees following the tweets online. TheStalwart, who had earlier noted that the wifi was overloaded, checked in at "the Spillover room for Zuckerberg. And I got a front row seat!" While

TheStalwart seemed excited about being in the front row of the overflow room, phillamb168 was less enthusiastic, writing, "Overflow room. Pwnd." Outside the keynote and overflow rooms, other users expressed their disinterest in the proceedings. Fiveruns was attending the "irrelevant logos session. No thanks, Zburg [sic]," while Journerdism said that s/he "will always take a Michael Lapp-lead [sic] design session over any Facebook fanboy session."

Before Zuckerberg and Lacy took the stage, attendees heard music from the band Daft Punk played in the room. Like other features of the venue, this music received mixed reactions. Some attendees hated it: cyberpr: "the intro music for zuckerberg is insufferable sxsw#" and SeanAmmirati described it as "crappy music." However, others enjoyed it: ninjatree claimed "daft punk just sets the mood for a good keynote :D" and daveman692 said that they were "Being pounded by the techno-beat for Zuck's entrance! The front row is dancing. #sxsw." Attendees even disagreed over how well-received Zuckerberg and Lacy were when they took the stage. Jstorerj said "That was a just a smattering when Z was intro'd... Ouch! #sxsw" while jason_pontin stated " Swear to God, people are SCREAMING because Zuckerberg is in the house." In short, there was a range of reactions from attendees prior to the interview, some of whom expressed positive anticipation, while others were displeased, expressing their displeasure with the venue, the way in which the keynote was introduced, or specifically with Zuckerberg and the other attendees.

Some attendees also shared the expectation that the session wouldn't be substantive, as there were scattered critiques of the Zuckerberg before the proceedings

began. However, these critiques largely focused on him and there were few references to Lacy before the interview began. Attendees tended to refer to the session exclusively as Zuckerberg's, without mentioning her. In a tongue-in-cheek post, technosailor says, "Keynote packed. Folks, Zuck is not that great of a speaker! Now gimme your seat." While the post clearly seems to have some humorous content, the comment about Zuckerberg's speaking abilities was shared by other attendees. After Zuckerberg took the stage, user agentdero stated, "Zuckerburg has the stage presence of a normal 20-something. Ick." This is perhaps the last critique of a performance that any speaker would wish to have.

After Zuckerberg and Lacy took the stage, it didn't take long for Twitter users to begin to criticize them. Heiko stated that "sarah lacey [sic] is in love with zuckerberg, me thinks ;)," while JamesPearce noted that "Zuckerberg has been well media trained. Talks to the crowd, not the nervous interviewer." This last comment is interesting, for it encapsulates two themes of many of the comments. Not only is Zuckerberg distanced from Lacy—he "talks to the crowd"—she is also criticized for seeming "nervous."

Soon after the interview began, any hint of geniality like that present in the pre-interview posts largely disappeared from the network, being quickly replaced by expressions of disappointment. A number of audience members described the proceedings as "awkward," noting that the interview was making them physically uncomfortable. One of the oddities of the entire episode is how quickly the mood of the audience, as expressed on Twitter, converged on a single interpretation of the event. Audience members repeated the same ideas and information, reinforcing through

repetition a singular narrative of the interview. Multiple users reported that the interview was "awkward," while eight different times during the keynote Twitter users suggested that either Zuckerberg or Lacy's conversational habits be the basis for a drinking game, in which players would drink every time Zuckerberg uses the word "communicate" or some other heavily repeated word, or when Lacy interrupts him. Although the audience members seem to have a range of subjective reactions to the introductory music, for example, there were very few positive reactions to Zuckerberg and Lacy's respective performances. In particular, the audience quickly turned on Lacy noting that she was "flirting" with Zuckerberg, acting like she had a "crush" on him, and that she was asking self-serving questions that diverted the conversation away from Zuckerberg and towards herself.

The "Revolt" Begins

Eventually, a new theme emerged in the Twitter conversation, that the audience had "revolted" and taken control of the keynote session. Nearly fifty minutes into the interview, bobbygwald wrote that "#SXSW crowd revolts on lacy....no more questions from her" and jason_pontin called it "a genuine revolt!" as "Lacey [sic] cedes the floor" to the audience. Scobleizer noted that "Sarah Lacy lost control of the interview" while "dtboyd" noted that the audience had taken "over control of the interview." Kalabird claimed that it was "mob rule @ zuck panel" while cesart stated that "@sarahlacy just got buried by audience," concluding: "The masses win." These comments represent a range of interpretations—from Lacy "lost control" and "cede[d]" the floor, to a "revolt" and "mob rule"— the most extreme of which, while imposing a popular narrative on the

event, seem to be inaccurate. These messages collectively refer to an event around fifty minutes into the interview in which an audience member shouted to the stage that Lacy should "ask better questions." In the video of the interview, this comment seems to take Lacy by surprise, and when she heard it she immediately opened up the floor for the audience to ask Zuckerberg questions directly ("Mark Zuckerberg Keynote," 2008). According to an interview given shortly after the keynote, Lacy claimed that they had decided against having an audience question-and-answer session before the event (Gallaga, 2008). Contrary to the popular narrative of the event, if the mob ruled it was only because Lacy choose to cut off her interview and begin a non-planned audience question-and-answer session as soon as she became aware of the audience's displeasure. While the masses did win in the sense that Lacy ended her interview, the comments about their victory over Lacy and how they had won control of the interview ignore the very real fact that Lacy ceded this control, rather than had it wrested from her. In retrospect, it appears that the Twitter audience conflated the offline conversation with the online one, as if Lacy was somehow forced to give in to the chorus of online critics who had been critiquing her for most of the session. However, she appears to have been unaware of this reaction, and, when confronted with the audience's displeasure, immediately responded to it. When watching the video—which, admittedly, only displays part of the situation and gives no information about how the audience appeared from the vantage point of the stage—it is difficult to register that the audience was displeased with the interview until that moment. Lacy and Zuckerberg appear to have been blindsided by the critique that metastasized on Twitter spilled over into the audience reaction.

Discussion

A unique feature of the Zuckerberg-Lacy interview, when compared to the other case studies documented here, is that the majority of the Twitter commentators were sharing the same physical space at the same time while communicating with each other via the service. Those who saw the keynote live did so from the SXSWi conference location, either from the main room or the overflow room. While there were major differences in these locations—many users complained on the Twitter stream about the distance from the main room to the overflow room, a distance which latecomers who found the main room full had to hike, and the overflow room suffered from some problems with its video feed—the two locations served to ensure that the majority of commentators experienced the interview in real time in the presence of other audience members/commentators. The physical interaction between attendees that this close proximity insured undoubtedly led to greater communication among audience members, as well as greater reinforcement of what were perceived as the trends of the audience moods, namely that Zuckerberg was a poor speaker and the Lacy had horribly mismanaged the interview. This reinforcement came from physical clues picked up in the audience, in addition to the Twitter messages. While we have only textual traces of this live interaction in the form of comments about the physical setting that appear on the Twitter network and blog posts and other after-the-fact recollections by attendees, it will become clear that the way in which the writing network created by Twitter and the offline social relations established by the audience members at the two locations had a distinct effect on the way in which the audience ultimately reacted to the keynote conversation.

Although I hope to shed some light on these interactions, it is not my intention to suggest that, in general, audience reactions like this one are somehow unique to the digital age. As long as there have been speakers, there have been hecklers and unruly audiences. Nor do I wish to give the impression that the features of this communication that I will highlight in this chapter are somehow unique to digital communication. I will suggest, rather, that the digital technologies involved heighten or illuminate network effects that were either latent in communication technology or which would only manifest themselves over long periods of time. The effect of digital technologies has been to foreground these latent tendencies of writing and speech and/or to vastly decrease the amount of time necessary for network effects to take hold. Digital technologies instantiate network features that were latent in previous technologies. By embracing them, it becomes a unique form of discourse, although one that is perhaps predicted in earlier tech.

As an example of such latent tendencies, consider the way in which authorship of the event is handled by the organizers. The SXSWi online program listed the event as "Keynote Interview with Mark Zuckerberg" ("Mark Zuckerberg," 2008). This title suggests that Zuckerberg was the "author" of the event, and it is possible that this perception is what initially turned the audience against Lacy, who was perceived as grabbing attention for herself. Such a perception might have been assisted further by the fact that Lacy's name was given only in the description of the event, but not the title ("Mark Zuckerberg," 2008). The title, then, suggests the following description of what would occur: the audience would sit and listen to Zuckerberg—the primary source of

information—respond to interview questions from a nameless interviewer. Yet this staid description can hardly be considered an accurate accounting of what actually happened. Lacy, the interviewer, absent from the title, enormously influenced the proceedings, not only the direction of the conversation, but the reaction of the audience. Further, the audience itself played a significant role in what happened in the keynote, even though the description makes no room for this type of participation. In light of the extent to which the SXSWi organizers worked to include audience participation as part of their conference structure, the continued assumption that the audience had no part in the event is surprising. In looking at the event, particularly reactions and responses to it after the fact, it is clear that the authorship of the event isn't solely located in Zuckerberg or Lacy or anyone else: the proceedings were the result of the interaction of all of those present. They were all the authors of the event and the conversations it contained.

Now, it is no revolutionary thing to say that the idea of the singular author is at best tenuous: language theorists have made such claims for at least the past forty years. Nor do I think that it can be convincingly argued that, in the particular case of a speaking engagement like the Zuckerberg interview, the audience influenced the speaker(s) and had a role in the way in which the conversation developed. Further, it would be ridiculous of me to claim that, prior to digital communications technologies like Twitter, audiences at live events did not communicate their approval or disapproval of the speakers or subject matter with each other, or that this communication didn't express itself in outcries of support or criticism. However, it would be equally strange to argue that the digital communication technologies used by the audience had no effect on what occurred during

the keynote event. Rather, these technologies brought the various features of communication and speaker behaviors together in such a way as to make them more permanent, present, and searchable. What was latent in the technology of writing was made actual in the form of ad hoc communications networks. Ages-old communication practices manifested themselves in new ways because of the near-instantaneous reach of these networks. I will argue here that it is the investigation of these networks—specifically the investigation of these networks' programs and protocol—that should be the main preparation for delivery when we consider rhetoric in networked publics.

Castells

Manuel Castells has argued that networks have always existed, but that they have traditionally been out performed by hierarchies, which were able to organize around specific goals (2000a, p. 15). However, according to Castells the information technologies that have allowed for the rise of the network society have overcome this problem, specifically by enabling networks to deal with the "co-ordination and management of complexity" (2000a, p. 15). One way in which this coordination occurs is through networks sharing information with each other, either through direct transfers—sending messages, for example—or through resonance processes, by which I mean the processes by which two entities are brought into coordination via language (Luhmann, 1989). Castells notes that one of the primary means by which networks coordinate with each other is through the actions of switchers. According to Castells, network power results from two types of behaviors: first, "the ability to program/reprogram the network(s) in terms of the goals assigned to the network," and, second, "the ability to

connect different networks to ensure their cooperation by sharing common goals and increasing resources," or what he calls switching (2004, p. 32). Castells calls both the programmers and switchers who wield this power" social actors," but notes that neither are necessarily individuals (2004, p. 32). Rather, "more often than not [programmers and switchers] operate at the interface between various social actors, defined in terms of their position in the social structure, and in the organizational framework of society" (2004, p. 32). Power is held in the network, instead of single actors, because "the exercise of power in the network society requires a complex set of joint action that goes beyond alliances to become a new form of subject" (2004, p. 32). Castells identifies this "subject" with Bruno Latour's (1993) "action-network actor," taking pains to clarify that he does not argue that networks wield this power in "abstract, unconscious" ways or as if they were "automata" (2004, p. 32).

In other words, Castells's position is that power in networks is enacted by programmers and switchers, social actors who aren't necessarily identifiable as individuals or organized groups, but who are able to program the goals of networks and enable coordination between networks. The role of programming and switching is especially important in the case of the networks involved in the Zuckerberg-Lacy interview because the event brought together a number of different networks. At the level of these networks, it is possible to outline the shape taken by the conversation in how these networks were programmed and how they interacted (or failed to interact) with each other.

Network Composition

A number of networks were involved in the conversation surrounding the Zuckerberg-Lacy interview. In the following analysis I will focus primarily on two: the audience attending the keynote (both in the interview space and the overflow rooms) and the network created on Twitter, consisting of these attendees and other Twitter users following and commenting on these attendees' messages.

Attendees. While complete demographic information isn't available, SXSW does provide some demographic information on the 2008 conference attendees on its website ("SXSW Demographic Information," 2009). According to the site, the age and financial background for all SXSW attendees (that is, SXSWi as well as the SXSW Film and Music conference attendees) is as follows:

Table 3.1: Age of 2008 SXSW Attendees

Age	**%**
Under 21	1
21-30	36
31-40	39
41-50	17
50+	7

Table 3.2: Income of 2008 SXSW Attendees

Income	**%**
Under $35,000	10
$35-50,000	13

$51-70,000	15
$70-100,000	19
$100,000+	43

From the data, it is clear that the majority of conference attendees—75%—were between the ages of 21–40, and that a significant portion—43%—earned more than $100,000 a year, with 62% earning more than $70,000 a year. While the site doesn't break down these numbers for only the Interactive conference attendees, they do provide a general idea of the makeup of the attendees at the conference. Of course, the individual conference numbers could be different, and these numbers don't give a clear idea of particular audience at the Zuckerberg-Lacy interview; however, they do allow us to claim, at least at a general level, that the SXSW audience was predominately young and affluent.

Twitter users. The Twitter network presents similar demographic challenges. Because Twitter doesn't systematically collect demographic information, it isn't possible to determine the age, gender, or other demographic information on Twitter users unless those users decide to share that information themselves. However, the messages themselves give us some information about the diversity of users responding to the Zuckerberg-Lacy interview.

477 unique Twitter users participated in the discussion surrounding the Zuckerberg-Lacy interview in the final data set. The breakdown of frequency of posts is as follows:

Table 3.3: Frequency of Twitter Posts

posts per user	unique users	%	# of posts	%
1	267	0.560	267	0.271
2	115	0.241	230	0.234
3	36	0.075	108	0.110
4	15	0.031	60	0.061
5	12	0.025	60	0.061
6	9	0.019	54	0.055
7	9	0.019	63	0.064
8	4	0.008	32	0.032
9	3	0.006	27	0.027
10	2	0.004	20	0.020
11	1	0.002	11	0.011
12	0	0.000	0	0.000
13	3	0.006	39	0.040
14	1	0.002	14	0.014
	477	1	985	1

Figure 3.1: Percentage of Unique Posts Per User

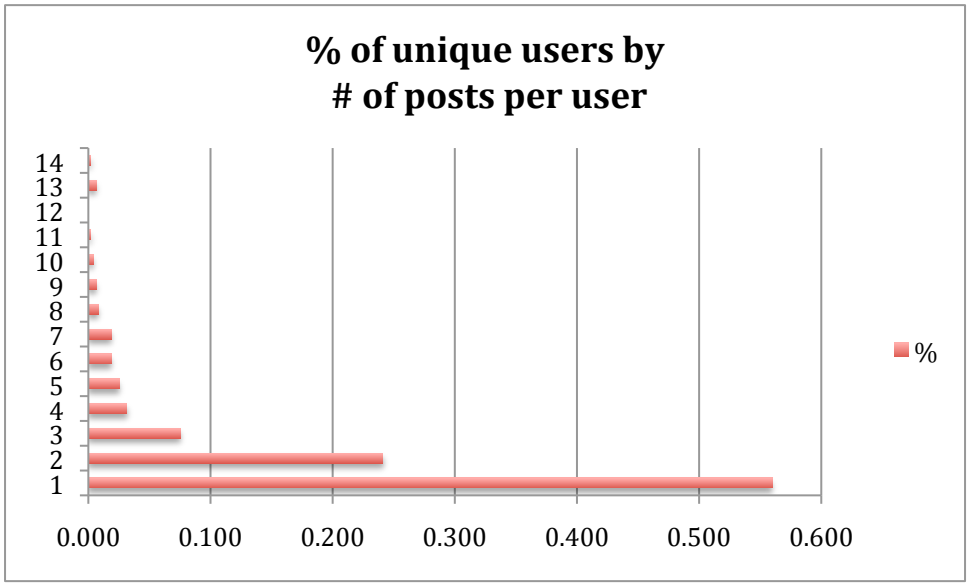
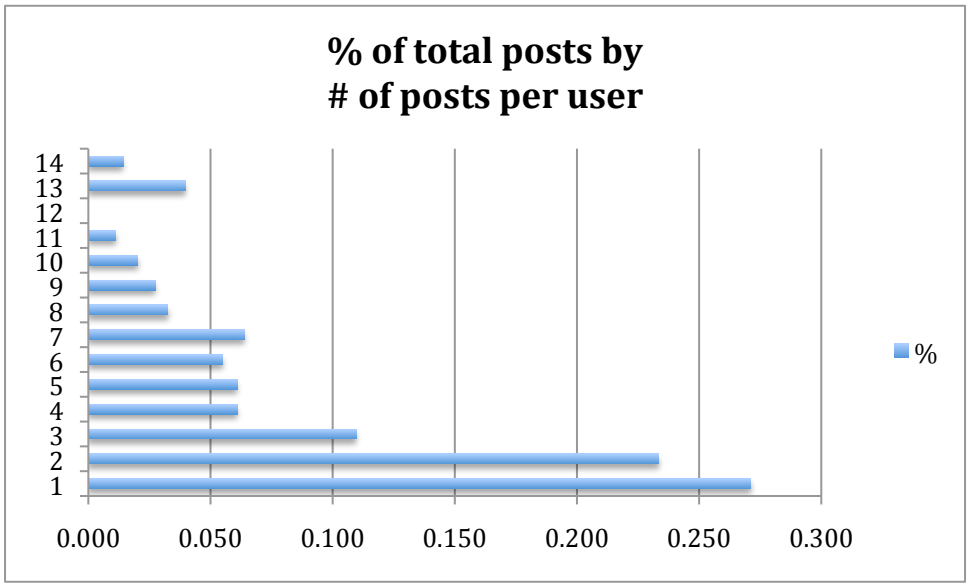


Figure 3.2: Percentage of Total Posts Per User



This data shows that the majority of users (80.1%) posted only two or fewer messages. While some users posted messages in the double digits (seven users posted ten messages or more), The distribution of posts per user follows a roughly logarithmic pattern. Not

surprisingly, most of the messages were posted by users who posted relatively infrequently; 50.5% of all messages captured in this study were posted by the 80.1% of users who posted two messages or fewer.

The Program

As I have argued earlier, the program of a network, along with the protocols that govern that network's behavior, are the digital networking equivalent of traditional delivery, which was itself concerned with the physical limitations and potential uses of a different system, the human body. In the previous chapter I discussed how Twitter's attraction to early adopters and the particular features of Congressman Culberson's Twitter network influenced the reactions of his network to his initial claim about the supposed censorship of his tweets as well as subsequent reactions. In this section, I will outline how the network of Twitter users at the Zuckerberg-Lacy interview developed a program that resulted in the event's negative outcome (for Zuckerberg and Lacy).

Feedback loops. All writing creates some sort of network: between sources, connotations, readers. In the case of a traditional print source, these networks can be very slow in their interactions with other networks—such as in the case of a book or journal article, which would have a lag between publication and response time—and others can be much quicker—a online newspaper article, which can reference new sources multiple times a day and quickly gather new readers. In the case of the Zuckerberg-Lacy interview, a significantly large network was generated in a very short period of time and resulted in a high degree of participation from users. One of the unique features of this network—and, generally, of all similar networks—is that, unlike the journal example

above, is that its always-on nature and semi-instantaneous communication greatly decreases the response time between nodes of the network. Second, the network is distributed. While the tweets in question center on Zuckerberg and Lacy's discussion, the responses, even those that contain essentially the same message, are generated from multiple nodes in the network in no particular order. This distribution is important, because the continual repetition of similar messages creates a feedback loop that reinforces a narrative about the event.

In contrast to the well established principle of "negative feedback" or "diminishing returns," the idea that too much of a good thing leads to losses, economists have in recent years investigated the role of positive feedback in environments. According to economist Brian Arthur:

> just as negative feedback keeps small perturbations from running away and tearing things apart in physical systems, diminishing returns ensure that no one firm or product can ever grow big enough to dominate the marketplace. When people get tired of candy bars, they switch to apples or whatever. When all the best hydroelectric dam sites have been used, the utility companies start building coal-fired plants. When enough fertilizer is enough, farmers quit applying it. Indeed, negative feedback/diminishing returns is what underlies the whole neoclassical vision of harmony, stability, and equilibrium in the economy. (Waldrop, 1992, pp. 34–35)

In other words, when a system grows unwieldy or overexposed, it starts to receive negative feedback, and this feedback plays a role in system structure. While Arthur didn't

dispute the existence of such negative feedback, he argued that there also existed a related feature of economics: positive feedback, or as he called it, increasing returns. According to Arthur, when complex systems get positive feedback, this feedback can result in even more positive feedback until single choices—and, not necessarily the best ones—become locked in, or so ubiquitous that it is difficult to alter them. Examples of such positive feedback are the QWERTY keyboard, the dominance of which was determined not by its appropriateness to the task of typing but by choices—some of which were made to slow down typists—that led to its ubiquity; the "clockwise" direction of clocks, which is purely arbitrary; and the triumph of the VHS video recording format over the technically superior Betamax.

As Resnick (1994) notes, these feedback loops have become a central feature of how we understand the behavior of complex systems. He writes, "Rather than viewing the world in terms of one individual object acting on another in a neat causal chain, researchers are viewing the world in terms of decentralized interactions and feedback loops" (p. 13). These feedback loops are present in communication of all kinds, including print and manuscript writing. Texts, such as scholarly or popular works, can become a locus of communication or debate among many nodes of a network, reaching a point where a text becomes read or commented upon because it is read or commented upon. That is, an article or book is read and discussed because it is being read and discussed by so many others. This attention suggests the importance of the text in a network, and leads to the maxim of increasing returns: the rich get richer. In the case of networked communication, this feedback process is greatly accelerated. While feedback loops can

be useful in generating solution to problems, as when one encounters a similar problem over and over (Bateson, 2000, p. 274), they can also lead to non-optimal results. As Gleick (1987) notes, while "feedback can get out of hand" it can also "produce stability" (p. 61). Yet in the case of arguments and ideas, this stability can coalesce around faulty conclusions or destructive outcomes, such as in the case of the Zuckerberg-Lacy interview. In a very real sense, the conversation about the interview on Twitter quickly became about the conversation. Because delivery is largely subject to network effects the rhetorician has to be concerned with both the nature and properties of those effects and how those effects are likely to manifest themselves in a particular rhetorical situation. This feedback subverts one of the primary features of rhetorical communication for the past 4,000 years: the fact that when a rhetorical technique is identified in critique the power of the technique is blunted. As the author of *On the Sublime* noted, "a figure is always most effective when it conceals the very fact of its being a figure" (17.1–2).

Since increasing returns have become ensconced in economic thinking, they have also begun to play a role in how we think about networks. Positive feedback loops can affect not just economic development, but the development of communication networks as well (Benkler, 2006, p. 26). As more and more messages reinforce a particular viewpoint, that viewpoint can become "locked in," just like the QWERTY keyboard, leaving these feedback effects to be highly significant in the programming of communication networks. Returning to the Zuckerberg-Lacy interview, while some early messages in the Twitter network were positive—suggesting anticipation for the interview or enjoyment of the music before the interview—the chorus of negative messages soon

began to dominate the stream. This resulted in a feedback loop that encouraged more negative opinions, and, significantly, the unambiguous messages posted on the online environment reinforced individual opinions about ambiguous signals given by the audience.

In short, the large number of messages in which authors depicted Zuckerberg and Lacy's performance in a negative light created a feedback loop in the audience, both online and off, in which the presence of these negative messages both validated and reinforced individual opinions about what was happening at the event, and this narrative quickly became the (largely) undisputed version of events.

Programming the network. In examining the posts in the data set, it seems clear that the program of the network that emerged—what Castells calls the network's "decisive" feature, the "ability" to influence the goals of the network (2004, p. 32)—was a negative critique of the Zuckerberg-Lacy interview. Of course, when I use the term program, I do not wish to suggest any kind of determination in the creation of this network or how its participants act. Rather, my discussions of the programs of individual networks are after-the-fact approximations that attempt to account for the emergent behavior of the network, behavior that is influenced by user actions, feedback loops, and other network effects. The word "program" does seem to beg the question: what individuals or groups are the social actors that programmed the network in this way? However, Castells takes great pains to point out that programmers aren't necessarily individuals or groups, yet the program is the result of the combined behavior of these social actors, not merely the determinism of the network. In the case of the Zuckerberg-

Lacy interview, we can say with some certainty that no one decided to create this network for the purpose of criticizing Zuckerberg and Lacy or for wresting control of the interview away from Lacy and into the hands of the audience. However, in examining its development, it seems clear that early posts in the network that had this orientation were influential in reinforcing the eventual program, leading to this result. AndRather than merely expressing disproval of the speakers, some participants seemed to enjoy the process of critiquing the pair, such as banannie who wrote "lol at the tweets out of the Zuckerberg session" and davemc500hats who asked "is there a backchannel so we can heckle faster? twitter just not keeping up with the potential re: zuck-lacey conversation." Even when the "revolt" occurred, some members of the audience expressed their enjoyment of this turn of events, as with this comment by oodleday: "OMG that was the best interrupt-mod-by-applause I've ever heard. ZUCKERBERG SHUTDOWN!" These reactions suggest that the Twitter responses—and the program they generated—were not merely spontaneous outbursts, but, at least in some cases, purposeful attempts to critique merely for the fun of critiquing.

Therefore we can ask, how did this program arise? One answer has already been given: through feedback loops reinforcing negative opinions of the event. While many Twitter commentators expressed their dislike for Lacy, Zuckerberg, and/or the direction the interview was taking, there were frequent references in the Twitter conversation to "the audience," and the dissatisfaction of this audience with the proceedings. This trend is notable in the responses of the Twitter users who commented most frequently in the data set. Of the seven users who posted ten or more messages during the interview, a slight

majority of those messages were highly negative. A total of 84 messages were posted by these users, of which 43 were negative comments (51.2%), either directly criticizing Zuckerberg or Lacy or mentioning the negative reaction of the audience. Only four (4.8%) of the posts contained positive remarks about either Zuckerberg or Lacy (for example, jason_pontin wrote, "SxSW: Zuckerberg apologizing, winningly, for Beacon"), and the reaming 37 messages were neutral (44.0%). Clearly there were far more negative messages than positive ones coming from this influential group of users. In these negative messages, the audience was mentioned as reacting negatively to the speakers fifteen times, while Zuckerberg was mentioned negatively nineteen times, and Lacy 28 times. Some messages mentioned more than one of the three topics, leading to the total being more than 43.

Clearly, these heavy posters were far more critical of the interview than they were complimentary, yet their critiques are mixed with descriptions of the live audience's critique, a grouping in which these users were highly productive members. Consider the case of Twitter user davemc500hats. Davemc500hats posted thirteen messages during the interview, eight of which contained negative comments about the interview. Interestingly, this user first seems to enjoy criticizing Lacy, but later expresses empathy for her. At around the half-hour mark of the interview, this user posted the following message:

> @anyone @ sxsw: is there a backchannel so we can heckle faster? Twitter just not keeping up with the potential re: zuck-lacey [sic] conversation

however, twenty minutes later this user wrote

> wow, i'm actually starting to feel sorry for sarah right about now. this is

> like watching Roger Clemens testimony. physically painful FAIL

and again

> Sarah takes a wrong turn.... taking on the audience. REALLY feel sorry for her now. altho she did ASK for it. OMG this is NUCLEAR FAIL.

A similar pattern of individual critique followed by comments about the audience critique can be seen in the posts by Scobleizer, which is the Twitter username of the well-known technology reporter Robert Scoble. Of Scoble's ten tweets, all but two were directly critical. After posting that he was heading to the interview, Scoble's first two messages were critiques of Zuckerberg and Lacy's performance, in which he compared their interview to an interview at a previous SXSWi between technology entrepreneur Guy Kawasaki and Microsoft executive Steve Ballmer, writing

> Zuckerberg is giving lots of PR answers. Lacy is asking too many business questions.
>
> lacy needs to study guy [sic] Kawasaki. His interview of ballmer [sic] was 1000 times better.

His next message was simply "Twitterer's hate Lacy." His remaining messages all reference the audience, either noting that Lacy failed to meet their expectations, or the audience's negative reactions.

I do not wish by this description to suggest that these heavy posters were solely responsible for programming the network. In fact, it seems that the topics and tone of these users' messages is similar to that of other users in the stream who posted messages less frequently. Rather, I use their tweets as examples of a complicated process of

emergence that dictated this program, one which relied on the interaction of the network of attendees and the online network of Twitter users. In short, it is possible that the "audience" that is frequently referred to does not have any one-to-one relationship with the attendees, but is rather a textual phenomenon that emerged out of the posting behavior of the Twitter users and certain key attendees. In other words, the program of this network emerged out of the distributed nature of the network and the reinforcement of feedback loops, both those between Twitter users and those between the physical audience and the Twitter network.

Switching and Resonance

In reconstructing the Zuckerberg-Lacy interview, the audience reaction, particularly as it might have appeared to Zuckerberg and Lacy on stage, is ambiguous. As I have already mentioned, if a person were to watch video of the interview without knowledge of the audience reactions on Twitter, it would not necessarily be clear that the audience was unhappy until the moment when audience members began making vocal outbursts ("Mark Zuckerberg Keynote," 2008). Even at these moments, such as when an audience member shouted "Beacon sucks!" during the interview, the deeply critical posture adopted by the online audience was not readily apparent. This certainly seems the case when one observes Zuckerberg and Lacy's reactions. In the video, Lacy responds to this outburst with good humor. Lacy commented after the interview that she and Zuckerberg were surprised by the final outburst that preceded the audience Q&A, stating that the two felt "the whole audience [was] laughing with us for forty-eight minutes" before turning on them (Gallaga, 2008).

At this point, it should be clear that Zuckerberg and Lacy, while providing the subjects for the networks that emerged around the interview, were not themselves part of these networks, at least from the point of view of the audience. They were rather a network to themselves; yet, crucially, they seem to have believed that they were directing a centered network, one focused on their conversation. This type of network is exemplified by the majority of Tweets from TeteSagehen, the Twitter user who posted the most messages during the interview. TeteSagehen's Tweets take on the form of repeating Zuckerberg and Lacy's main points. For example, in the following tweets this user notes some of the major points of discussion between Zuckerberg and Lacy:

> terrorism comes from a lack of empathy and understanding. ppl need a community, look to radical groups.
>
> Facebook's mission: connect people to make statements that matter to them. "channel people's voices."
>
> Sarah asks, is facebook [sic] at odds with privacy?

Such messages are common in backchannel discussions surrounding public events like the interview. In their study of backchannels, McCarthy and boyd (2005) classified these types of messages as being work-related and focused on the content of speaker's presentations. McCarthy and boyd further noted that this broad category of work-related messages constituted the majority of messages in the conference backchannel that they examined. In the work/content scenario—networks that primarily consist of the repetition of other content—that network would be centered on one or a few nodes, typically the speaker or speakers. While McCarthy and boyd's study focused on only one conference,

making it difficult to extend this claim to all conference backchannels, there is no reason to think that Zuckerberg and Lacy didn't approach the backchannel at their interview as being of this type. In other words, their disregard for the digital backchannel could be related to their expectation that it would be primarily centered on the content of their interview, not on their performances on stage or in any other way directed at them personally.

While TeteSagehen's messages demonstrate that this form of backchannel communication was present in the Twitter network, an analysis of the entire network and the audience response demonstrates that it was not dominant. They certainly were not the kind of messages for which this event was later remembered. While one could argue that the network demonstrated tendencies toward a work/content program, especially before the audience outbursts that preceded the Q&A, this was not how most users appeared to perceive the network. A better description of the effect of Zuckerberg and Lacy's communication on the Twitter network is as separate network that was connected to the audience network. As such, there are important moments of coordination—of switching (Castells, 2004)—between Twitter users and the audience that affected the mutual development of these networks. These moments primarily took the form of resonance and the audience-based outbursts.

Switching and resonance. One theoretical means of viewing the Zuckerberg-Lacy interview is to do so as an example of structural coupling (Maturana & Varela, 1980) in communication, or the temporary alignment of two or more entities—individuals, groups, networks—for the production and/or perpetuation of an argument. One of the primary

uses of autopoietic theory in communication was made by Niklas Luhmann. In his *Ecological Communication* (1989), Luhmann calls communication-based structural coupling "resonance." According to Luhmann, systems can be differentiated from their environments by the fact that any environment will be more complex than a system that is part of that environment (Bednarz, 1989). In other words, the rainforest is more complicated than a jaguar, and this difference in complexity helps us distinguish the two at the system level. Luhmann argues that systems and environments communicate by bringing their complexities into correspondence with each other, and they do this by creating structures that reduce the complexity of the environment through resonance (Luhmann, 1989, p. 15ff.).

According to Luhmann, autopoietic theory dictates that a system can only interact with its environment, and therefore achieve resonance, based on its own structure. In other words, if the structure of a particular entity made it so that another entity wasn't perceptible, resonance would not be possible. Because of this difference, Luhmann argues that systems that are more complex have a better chance for resonance. That is, the more diverse the structure of a system, and the more ways in which it is able to interact with its environment, the more chances it will have to achieve resonance with a wide array of other entities. According to Luhmann, one way in which resonance occurs is through language, which is linear and selective, and thus cannot represent the world all at once. Meaning, then, Luhmann argues, is "a representation of world complexity that is actualizable at any moment" (p. 17). This meaning is established through difference, which is a process set up by the system for turning facts from the environment into

information. Subsystems are created in the larger system to allow for difference and the necessary complexity for resonance, and the unity of the system can be represented in the system thus creating difference unintentionally and allowing for self-observation. In other words, communication—because of its fecundity, its generativity—is one means whereby two complex structures can achieve resonance. And one characteristic of resonance is that systems that are open to more inputs—that are more complex—are better able to achieve resonance with their environment.

The audience at the Zuckerberg-Lacy interview would seem to be an ideal example of this kind of resonance-ready network. The networking technologies used by the attendees of the keynote allowed audience members to coalesce around a particular interpretation of the events they were witnessing. As I have argued, rowdy audience behavior isn't unique to digital backchannels. However, the technology used by the conference-goers would seem in this case to have made possible a very quick process of connection between individuals. For contrast, consider the case of an audience that isn't connected electronically. Audience members can still communicate using backchannels: they can talk to those audience members around them, or write each other notes. These methods of communication, however, are limited by time and space considerations. An audience member can only reasonably share handwritten communications with a small number of people around her or him and can only speak to so many people in the vicinity without disrupting the proceedings. In these cases, communication is limited to individuals in the immediate vicinity of the person who wishes to communicate, and the communicator can only interact with a few people at one time. Of course, one person can

interact with the entire crowd at once by shouting a response so that both the audience and speaker can hear. For a traditional audience, this type of group communication is perhaps the best means of solidifying audience reaction. Either the audience agrees with the shouted response, or it does not. Of course, in most social situations such a response would be considered highly inappropriate, so the shouter would run the risk of alienating those who would agree with his or her comment merely because of the breach of decorum.

One way of expressing this disconnect between the speakers and audience would be to say that the audience networks—consisting of both the physical audience and the digital backchannel on Twitter—were a system of greater complexity than the "speaker-interviewer" system, the latter of which was delayed in recognizing that its resonance with the audience was failing. However, the greater complexity of the audience networks did not prevent them from succumbing to the mob mentality—the groupthink—that led to the audience demanding control of the interview. One reason for this result is that, rather than being truly open, the audience networks did not have sufficient structural diversity to allow for divergent viewpoints. In other words, while the network itself consisted of a number of distinct users who were highly connected with each other, as a group this network was not diverse enough to resonate with other networks, thereby resulting in the groupthink tendencies the network later demonstrated. In contrast to Congressman Culberson's network, which included a diverse pool of individuals that questioned his claim about congressional censorship relatively quickly, this network generated very few influential responses that countered the dominant narrative of failure on the part of

Zuckerberg and Lacy.

Hutchins (1995) suggests one possible reason for this result. He notes that, while groups can display cognitive properties that are different from those of individuals, these groups have to reconcile the diversity of viewpoints among their members by some sort of mechanism. In modeling systems that are prone to confirmation bias, or the "propensity to affirm prior interpretations and to discount, ignore, or reinterpret evidence that runs counter to an already-formed interpretation" (p. 239), Hutchins found that a higher bandwidth of communication between group members does not necessarily equal better communication. That is, when the amount of information shared between members of a group, or nodes in a network, becomes too high, this increases the possibility of arriving at an incorrect conclusion, or in this case bias against alternative interpretations. While Hutchins arrived at this result from mathematical modeling of information networks, it has been supported by other studies of the nature of complex systems (Kauffman, 1995). Systems that have too few interconnections are often stagnant and show little complex development, while systems with too many connections tend to quickly converge on single, often non-optimal, outcomes. In the case of the audience networks surrounding the Zuckerberg-Lacy interview, it would seem that the high degree of interaction within and between these networks led to the speedy convergence on the "interviewer FAIL" narrative, as one Twitter user described it. In short, the real failure evident on this network was the failure of effective switching—that is, the failure to create and develop connections between the Twitter network and outside networks that would allow for diversity of opinion—and this failure a primary factor in the groupthink

tendencies of the audience. This problem was only exacerbated by the lack of diversity in the networks, the result of which was that the larger network lacked the necessary complexity for resonance with outside networks that would have made possible such switching. The only network with which the audience network seemed to have had any major interaction was that of other Twitter users who did not attend the event. The participants in this second network largely egged on the audience members, perhaps due to a similarity in viewpoint that derived from Twitter's status in early 2008 as a largely tech-centric early-adopter oriented service.

Prior narratives. Of course, all the blame can't be attributed to the audience. Zuckerberg and Lacy also failed to effectively connect with the audience network. Luhmann (1989) states that resonance occurs when two complex structures bring "their complexities into correspondence with each other by creating structures that reduce the complexity of the environment" (Bednarz, 1989). In the case of the Twitter and audience networks at the interview, neither were receptive to the intended purpose of the talk, and Zuckerberg and Lacy conspicuously ignored the structure that could have allowed them to coordinate with the audience: Twitter. In a post-interview interview, Lacy noted that the audience at the "developer conference" wasn't receptive to their discussion, and that Zuckerberg was a "weird fit" for SXSWi, because, as she put it, "someone like Mark [Zuckerberg] doesn't talk about [the] API [Application Programming Interface], he talks about company strategy" (Gallaga, 2008). In other words, Lacy attributed the audience reaction to the focus of the interview on business and strategy, rather than the technologic features of Facebook, such as its developer interface. Rather than embrace the news-

focused orientation of Lacy and Zuckerberg's talk, the audience networks largely didn't connect with them. Instead, the networks resonated quite strongly with two other frames: the perception that Zuckerberg is a poor communicator, and the generally misogynistic way that women are often treated in technology-oriented online communication.

Similarly, Zuckerberg and Lacy, who, based on Lacy's comments, seemed to be aware of the audience at the conference, failed to tailor their messages to that audience. Perhaps more incriminatingly, they conspicuously refused to interact with the audience according to the conference's long-standing tradition of digital backchannel communication, ignoring the audience's wishes and seemingly snubbing them as well. As I mentioned earlier, when the audience's displeasure became apparent, Lacy immediately tried to placate them. If she or Zuckerberg had had access to the audience networks represented by the digital backchannel, it is likely that the two of them could have adjusted their on-stage reactions so as to avoid the eventual audience backlash.

Zuckerberg the communicator. The audience networks did resonate with other networks, however. As I mentioned earlier, writing and communication form networks by virtue of their associative and connotative properties. By 2008, Zuckerberg and his company were notorious in technology circles for their perceived communication failures. The most well known of these failures was Facebook's introduction of the News Feed feature in 2006 (boyd, 2008a). At the time, Zuckerberg responded to users' complaints about the incident by noting that the company, and he himself, "really messed this one up" and had done "a pretty bad job of communicating" about what the service did with user information (St. John, 2006). While the News Feed incident eventually blew

over—News Feed is now the primary interface for Facebook—the poor way in which it was handled was still fresh in the minds of users and technology pundits when Beacon, Facebook's attempt at an advertising platform, was introduced a year later. Beacon was the name of an advertising platform that Facebook introduced in 2007. Beacon's chief distinguishing feature was that it allowed sites outside of Facebook to post information about Facebook users' web-browsing habits back to the social networking site. When this form of advertising was introduced to the site, many users felt that its features weren't clearly explained, and that giving companies the ability to post information to their news feeds was an unwelcome intrusion on this personal space (Karp, 2007). Beacon was eventually discontinued in 2009. As with the introduction of News Feed, the introduction of Beacon led to a user backlash against the company (Karp, 2007). As part of the backlash, complaints about the policy and Facebook's handling of it frequently singled out Zuckerberg's communication style for criticism. For example, in a blog post disputing a claim Zuckerberg made about Beacon during an interview on *60 Minutes*, Duncan Riley (2008) suggested that Zuckerberg's "relative youth" explained some of his failures as a communicator. Additionally, Riley repeated another commentator's accusation that Zuckerberg had "become 'a suit'" who "trot[s] out the company line" via "canned response[s]," and often seemed unprepared when surprised by questions he didn't have prepared answers for. Riley ends the piece by noting that Zuckerberg should be "more open and honest" as well as "less robotic."

While this general claim, that Zuckerberg is a poor communicator, was repeated over and over in the Twitter network, many of the specific claims that Riley lists were

repeated as well. Kando wrote "So far Zuckerberg is a corporate robot"; CampfireMike claimed he "sounds like a corporate boardroom on steroids"; and kaydub said he used "corporate-speak" in the talk. Stefanhartwig wrote "The dude in front of me is counting how many time mark drops stupid empty buzz phrases" such as "helping people communicate more efficiently"; AlexDelyle complained that "Zuck is not well-spoken. Repeating lame buzzwords."; cyberpr wrote, "Zuckerberg has repeated the same trite line 6 times"; and Leslieann44 wrote that Zuckerberg was "Pretty well media trained," as evidenced by his use of "repeat messages." In short, the critiques of Zuckerberg in the Twitter network echoed and repeated critiques of his communication practices that predated the interview, sometimes by years. This fact suggests that the complaints at the interview weren't the direct result of audience perception, but rather that network's resonance with this previous view of Zuckerberg's speaking performances.

Lacy. Perhaps more disturbing were the critiques of Lacy, critiques which appeared to have their roots in the widespread abuse directed at women in technology-oriented online environments. In her post-interview interview, Lacy attempted to brush off the audience reaction by saying "I'm one of the only women reporting on tech; I get this constantly" (Gallaga, 2008), suggesting her awareness of the strong history of verbal harassment of women in online environments devoted to technology topics. Responding to an incident in 2007 in which a female technology blogger, Kathy Sierra, was repeatedly harassed on her site, as well as on another website, Walsh (2007) outlined the abuse that is common in response to women's writing about technology. Walsh notes the extreme nature of the posts on Sierra's blog, including "crude sexual garbage" and,

eventually, threats of violence, which include threats of murder accompanied by graphic rape imagery. In the article, Walsh quoted Robert Scoble, who had also noted the extent of the problem, writing, "whenever I post a video of a female technologist there invariably are snide remarks about body parts and other things that simply wouldn't happen if the interviewee were a man." Indeed, as I write this in the summer of 2010 the "most recent" comment on the Lacy interview video (Gallaga, 2008), by YouTube user riobabilonia, reads "she is ugly, her legs look like pork legs, anoying [sic] voice, her husband must be gay, no male would face a biaaatch like that." This comment was accompanied by a graphic indicating that two other YouTube users "liked" it.

While the comments posted to the audience network on Twitter never reached the extremes of those leveled against Sierra, some were quite graphic—theunicorn wrote "Sorry zuck, Sarah lacy rode you like I rode her last night"—and many of the comments, like those concerning Lacy's supposed flirtatious behavior with Zuckerberg and her appearance, seemed unlikely to have been directed at a man in a similar position. As Scoble wrote about the Zuckerberg-Lacy interview, in a post where he publically apologized to Lacy for his role in the event:

> There is quite a bit of sexism that is a subtext here. Lots of people in the hallways commented on her choice of clothing (she wore a short skirt that made her legs very prominently displayed). And on n [sic] her flirtatious behavior (she twirled her hair, many people told me afterward, like a schoolgirl in love). I tried to ignore this, but I now am pretty sure that if a guy were doing the interview, and did just as badly, that the audience

wouldn't have turned on him so harshly. (Scoble, 2008)

As with the critiques of Zuckerberg dredging up earlier responses to his communication habits, the critiques of Lacy seemed to be informed by a subculture of sexism online directed at women in technology fields.

Both the critiques against Zuckerberg and Lacy, then, illustrate the extent to which the Twitter network resonated with networks external to the interview, rather than the interviewers' intended goals. However, these acts of resonance were influenced by the lack of diversity in the network, and thus appeared to subject to confirmation bias—on the one hand verifying Zuckerberg's poor communication skills, and on the other denigrating Lacy as a woman in the technology field—and groupthink. In these cases, the lack of resonance with other networks had a strong effect on the network, for what the network saw was that Zuckerberg was failing to communicate effectively, in accordance with the narrative that he (and his company) were failed communicators, and Lacy was acting like a girl with a crush.

Audience outbursts. The interview was interrupted by at least two instances of vocal audience feedback. At around the twenty-minute mark in the video, an audience member shouted "Beacon sucks!" loud enough to be heard on the video ("Mark Zuckerberg Keynote," 2008). Lacy responded to the audience member who shouted—later identified on the Twitter feed as technosailor—that the discussion would "get to" Beacon "later." The second instance came near the end of the interview, when an unidentified audience member, in response to Lacy's querying of a friend in the audience on a point of debate between her and Zuckerberg, yelled "ask something interesting!,"

after which Lacy surrendered the floor to the audience, who directly asked questions of Zuckerberg.

I argue that these outbursts are examples of switches between the audience network and the Twitter network. Working hand-in-hand with the program of the networks, the switching events achieved two purposes: they gave a voice to the widely-attested to, but otherwise ambiguous, negative reaction of the audience and allowed this negative reaction to come into contact with the technological tools of the Twitter network, giving this negative response a much more effective platform than it would have otherwise had. The first outburst, technosailor's comment that "Beacon sucks!," exists both online in the Twitter conversation as well as offline in the form of a comment shouted at the stage. In response to a question from Lacy about how the site will be monetized, Zuckerberg remarked beginning at around the 17:00 mark in the video,

> actually at Facebook, what we think are the important things, what we're focused on all the time, right, is building this product, building this system that helps people communicate and connect. And everything that we do at the company, we think about through that frame. That's our mission, that's what we are trying to achieve. And revenue growth, and we've decided that building a business is the most effective way for us to go about meeting our mission and achieving our goals that we have in the world. ("Mark Zuckerberg Keynote," 2008)

At 2:22 CST, technosailor—identified on his Twitter profile page as Aaron Brazell—posted this message to Twitter: "Zuck: We do things according to our mission. Zuck,

maybe your mission needs changing. Beacon sucks." Then, at the 18:13 mark in the video, someone from the audience shouted "Beacon sucks." At 2:24:21 cinevegas posted to Twitter that "somebody screamed "beacon sucks!" as Zuck was talking about monetization." It is not clear if technosailor/Brazell shouted his complaint before he tweeted it. The tweet had to occur after the 17:00 point in the video when Zuckerberg made his comment about Facebook's corporate mission, but, for it to have come before he shouted, he would have had to post in the next minute. At any rate, the two events were directly connected. Either immediately before or soon after Brazell yelled in the conference space, he posted a more detailed version of the same message to Twitter. Further, other Twitter users connected his offline outburst with his online persona, noting that it was "technosailor" that had yelled the remark. For example, NinjaChad posted that "zuck said thank you after aaron yelled beacon sucks."

The confluence between the online network, that is, users following the Twitter messages about the keynote, and those who attended the keynote event is illustrated in this example. While Brazell's verbal outburst was acknowledged in both networks, it had comparatively little impact on either. The audience reaction in the room was minimal, while very little of the Twitter discussion focused on Beacon. Brazell made a point of claiming that he wasn't trying to be a troublemaker, but rather was trying to bring to Zuckerberg's attention the dislike for Beacon that some had, stating: "Folks, to be clear... I was not trying to heckle for the sake of heckling. But Zuck doesn't listen to blogs. He needs to know how we feel" & "He comes to SXSWinteractive. He should expect an interactive keynote. Sorry if I offend, but not really all that sorry."

While this outburst may have created the environment in which the later outburst seemed natural, it didn't effect much of a change in the discussion. As NinjaChad pointed, out, Zuckerberg said "thank you" after the outburst, and Lacy took the event in stride, promising to question Zuckerberg about Beacon later in the interview. The second outburst occurred at 51:50 in the video, after Lacy, disputing a claim made by Zuckerberg, asked a friend in the crowd if Zuckerberg had said something particular in a dinner conversation the previous night. While waiting for an answer, an unidentified audience member shouted "Talk about something interesting!" Unlike the first outburst, this one did have a major impact on Lacy and Zuckerberg's behavior. Responding to the heckler, Lacy surrendered the floor to the audience to ask their own questions, stating that her "job is harder than it looks," a comment that was met with derision by the audience. This outburst was largely in agreement with the online criticisms of the keynote: that it was uninteresting and uncomfortable and that Lacy and Zuckerberg's individual performances were lackluster. As such, it quickly gained traction with the audience, fed by the Twitter conversation.

In fact, the problems of Zuckerberg and Lacy and audience could be attributed to the failure of each network to connect with the other. Zuckerberg and Lacy were apparently unaware of the reaction of the audience to their discussion, while the audience seemed to feel that the two were deliberately ignoring their critiques of the event. While some participants in keynotes such as this one make a point of monitoring the audience's online feedback, it would have been immediately apparent to the audience that neither Zuckerberg or Lacy were doing so, and this failure to account for their interests was

perceived to be a flaw in their presentation. While the various networks of communication activated by the keynote were very effective in some ways—bringing together disparate members of the audience, connecting people in the overflow room and even those not at the event to the proceedings—there was very little communication between the people on stage and the audience, and that lack of connection—the failure to network—is what ultimately derailed the proceedings.

Memory and Delivery

As I have suggested before, memory and delivery play key roles in digital communication, both through processes of resonance and the physical, structural, and programmatic nature of communication networks. In the previous section, I outlined the ways in which the structure of these networks, such as their reliance on network effects and the ways in which they connected with each other and outside structures, affected their development. With this in mind, it is helpful to note what did and did not resonate with these networks in this instance.

Memory

As I have outlined above, the primary points of resonance were the narrative of Zuckerberg-as-a-poor-communicator and the misogyny that is frequently the response to women's comments online, particularly in the technology field. These points of resonance played a major role in the programming of these networks and their subsequent development. Merely noting their impact, however, doesn't explain why they played the role they played in the event. Why, for instance, did the networks not rely more heavily on traditional logical argumentation? Why are there so few references to outside sources?

And, more generally, how can we talk about the audience assumptions that served as switching points using the tools of rhetoric? Such questions, when they deal with the ability of networks to connect with each other, are rightly viewed as questions of memory: the means by which two or more entities— persons, networks, societies—interact with each other in communication.

Epideictic discourse. Studying ad hoc communications networks like these gives rhetoricians insight into the progress of argumentation that allows us, if we so choose, to make interventions in the development of that rhetoric. The affordances of Twitter certainly limit the types of argumentation that are possible in that environment. The most notable constraint is the 140-character limit on messages, which prevents most sustained, subtle, or complex argumentation and forces authors to move most of their evidence and extended reasoning off site—on blogs or other forms of internet publishing—and then link it back to in their Twitter stream. There is a noticeable absence of such links in the Twitter network surrounding the Zuckerberg-Lacy interview. Additionally, this network contains few other forms of links—photos, audio, video. Overall, less than twenty unique links were shared in the network during the event. Those links consisted primarily of coverage of the event—live blogging—with a few photographs and other media as well.

There was little sustained argument occurring in the network during the event; however, sustained, thoughtful critiques of the audience reaction appeared soon afterwards; cf. (Hinckley, 2008; Scoble, 2008). This lack of traditional argument is likely due to a number of factors. Undoubtedly the speed of communication in the network was a contributing factor to the lack of sustained debate, or the failure of any sustained

counter-programming until the event was nearly over, when a few members of the Twitter network expressed their sympathy for Lacy and claimed that her performance—and the interview in general—wasn't that bad. The primary reason for the lack of sustained traditional argumentation in the Twitter network, however, is the programming of the network. One effect of this programming was that it led to certain conclusions, such as Zuckerberg's communication problems, appearing foregone and beyond debate to the Twitter users participating in the network. For this reason, participants in the network tended to demonstrate these conclusions, along with varying degrees of outrage leveled at the speakers for their failure to perform to those participants expectations.

One way traditional rhetoric has of describing this type of communication is as epideictic rhetoric. Epideictic rhetoric has traditionally been set against the two forms of "practical" rhetoric, deliberative and judicial. Deliberative rhetoric has dealt primarily with political decision making, focusing arguments on the future and what should be done, while judicial rhetoric was common in legal environments, describing situations where decisions needed to be made about what had happened in the past. In contrast to these practical forms of deliberation, epideictic has traditionally been seen as a catch-all category for other forms of communication—poetry, literature—and is known as a rhetoric of affixing praise or blame in formal communication. For this reason, rhetoricians have frequently seen it as being beneath the other two categories, because epideictic discourse rarely calls for action or decision-making on the part of an audience. Since Aristotle included these categories in his *On Rhetoric*, they have more or less stood as stable means of dividing up all discourse into one of these three categories. As rhetoric

instruction moved increasingly to the serve the goal of teaching students how to be public speakers in either politics or law, deliberative and judicial rhetoric rose to prominence, while epideictic was increasingly a catch-all category for other, less important categories.

Using this framework, it would seem clear that the audience and Twitter networks at the Zuckerberg-Lacy interview were programmed in a way that was largely epideictic. Such a reading would suggest that while there were messages that discussed decisions about the future—Lacy had an upcoming book that many members of the audience expressed their lack of enthusiasm for—and about what had happened in the past—many had made up their mind about Zuckerberg's speaking ability before the talk even began—a large number of the messages were devoted to praise or blame, a common form of epideictic discourse.

Yet, despite the superficial fit of this discourse with these traditional categories, on second look it becomes more challenging to map this discourse on traditional categories so neatly. As I already mentioned, there were examples of deliberative and judicial claims evident in the networks. More significantly, the categories of deliberative, judicial, and epideictic were based on two key characteristics. First, all three shared the quality that they were directed toward an audience, either as calls to action, in the case of deliberative and judicial, or as opportunities for praising or blaming another party. Second, the first two are distinguished by the orientation in time of these calls: deliberative looked towards the future, judicial towards the past. Taking this latter case first, the discourse that occurred during the Zuckerberg-Lacy interview does not seem to be a good fit for the traditional conception of epideictic. As deliberative and judicial

discourse are each clearly oriented with regard to time, epideictic has traditionally been defined as lacking this quality. It was the category appropriate for communication that was "out of time," such as literature and poetry, or which encompassed different times and attempted to bring them to the present, as with a funeral oration. In distinction with these traditional examples, the discourse in these networks is focused towards the present, dealing only with the situation of the interview as it happened. Additionally, as I have noted it had very little to do with other "times" in the lack of references to outside events or links to those preserving the event for the future, although there were some examples of each.

More curious is the question of how to categorize the orientation of this discourse in relation to any notion of an audience. In the case of the audience network, it consisted of a physical audience, yet this audience was audience to a different discourse, one that the network, as an author, critiqued. In the case of the Twitter network, its members were simultaneously the audience for its messages as well as the authors of their own messages on the network. While it is clear that others not actively participating in the network were aware of or followed the messages of this network, it is also, perplexingly, the case that there were no clear lines between author and audience in this network. As such, notions like the call to action of an audience seem antiquated and difficult to apply in this case.

In short, if we follow the standards of traditional rhetoric, the communication in these networks is epideictic most clearly in its inability to be clearly classified in the categories of deliberative or judicial. Such a negative definition is unsatisfying, particularly because of the changes in rhetoricians' understanding of the category of

epideictic over the last decade. In his *Rhetoric and Poetics in Antiquity* (2000), Walker provides a way of thinking about epideictic that frames the category in positive terms, rather than merely as not-deliberative or not-judicial rhetoric. While Walker does note that epideictic can be seen as speech in "nonpragmatic settings" where the "audience does not have the role of a juror or councilor/assemblyman" (p. 8), he provides a positive definition as well. Following Aristotle's discussion of epideictic in his *Rhetoric* (I.3 1358b), in which he states "the role of an epideictic's audience" to be "a *theôros*, that is, one who is to make 'observations'… about what is praiseworthy" (p. 9). Walker writes that, according to Aristotle, "the role of the *theôros, in short, is not to make rulings but to form opinions about and in response to the discourse presented*" (p. 9; italics in original). Walker goes on to say:

> In this view, "epideictic" appears as that which shapes and cultivates the basic codes of value and belief by which a society or culture lives; it shapes the ideologies and imageries with which, and by which, the individual members of a community identify themselves; and, perhaps most significantly, it shapes the fundamental grounds, the "deep" commitments and presuppositions, that will underlie and ultimately determine decision and debate in particular pragmatic forums. As such, epideictic suasion is not limited to the reinforcement of existing beliefs and ideologies, or to merely ornamental displays of clever speech.… Epideictic can also work to challenge or transform conventional beliefs. (p. 9)

In other words, epideictic is positively described as discourse that "shapes and cultivates" the deep-rooted foundations of thought and argumentation, including "ideologies" and "identit[y]," "'deep' commitments and presuppositions" which influence the decision making in "pragmatic forums," decision making which is traditionally characterized by deliberative and judicial discourse. Following these observations, Walker concludes: "when conceived in positive terms and not simply in terms of lack, epideictic discourse reveals itself (as Perelman recognized) as the central and indeed fundamental mode of rhetoric in human culture" (p. 10).

Walker's reformulation of the relative importance of "practical" and epideictic discourse challenges long-held assumptions within the field of rhetoric about how arguments affect decision-making. For the purposes of this study, it provides a nuanced means of understanding discourse like that in the networks surrounding the Zuckerberg-Lacy debate. Further, it allows us to abandon the pragmatic formulations of speaker and audience or the call to action, and replace these constructions with categories based on deep persuasive power, a power represented by our notions of ideology, presupposition, and belief. These concepts, and the distance from rational argumentation that they connote, have long challenged the ideals of perfect argumentation championed by rhetoricians. It's no wonder that the categories of deliberative and judicial discourse have been privileged through most of rhetorical history, seeing as they privileged the role of rational discourse, clear evidentiary procedure, and, in general, the idea that decision making be the result of specific and conscious deliberation, and not subject to the preconceived notions or the subconscious effects of ideology, etc. Yet ideology,

presupposition, and belief play an indisputable role in decision making, a role that has perhaps been ignored or deprecated by reason of their supposed irrationality, and, perhaps more relevant, their inability to be sublimated to the procedures of deliberative and judicial discourse. In short, rhetoric has been quick to disparage ideological and other formations that don't develop from deliberative or judicial processes, and, by extension, ignored or slighted the rhetorical roots of these forms of judgment arising from epideictic discourse.

Resonance and epideictic. At this point, it should be clear that Walker's nuanced description of epideictic doesn't displace our earlier classification of this conversation as epideictic, but rather enfolds it, replacing the definition of lack with a positive formulation of epideictic. This understanding, rather than merely defining the category as a lack of deliberative or judicial features, helps us understand the role that such conversations play in the formation of opinion and non-formal argumentation. For this case study, I have argued that there was a relative lack of formal argumentation, defined by claims presented with evidence following the standards of formal, rational argumentation. Instead, while claims were made, they were presented informally, as confirmations of the presuppositions presented and/or established by discourses that preceded this event. In this light, these networks served largely to reify or support the claims that resonated with the network and drove its program.

The process of resonance, then, serves not just a memory function, by determining which other forms of discourse are operative within the network. Additionally, it serves an argumentative function, by establishing the type of discourse

that the network will produce. This discourse is, of course, subject to counter-programming, or to complete obscurity if the network were not to resonate with other networks. However, the nature of the network was highly dependent upon the resonances to which it was susceptible, and those resonances, by virtue of assumptions that they carried with them, largely determined the epideictic character of the network. In other words, many salient features of the network—its epideictic character, the program—were formed as a result of these resonances, or the work of memory. As such, this stage in the development of discourse is a fundamental moment on which rhetoricians must focus if they wish to influence the character of such networks rhetorically.

Delivery

In describing the networks and their constitutions, I have already touched on some delivery issues, such as the physical instantiation of the audience and Twitter networks. In this section, I would like to address other questions of delivery and their relevance to the interview and the reaction of the networks, namely: Why were the switches between the audience and Twitter network so effective? And, conversely, why were the switches, and communication of intentions in general, between the speakers and these networks so poor?

Protocol and switching. The primary reason for the effectiveness of the switches between the audience and the Twitter network was their connection offline, in the physical spaces where the interview took place. As we saw in the previous chapter, where news articles and blog posts on the Twitter in Congress controversy were used to coordinate and support arguments within the network, information, events, and other

generally accessible objects outside the network can be leveraged (with varying results) to gain legitimacy within the network. These external events can serve another purpose as well; to coordinate interaction between different networks. In the case of the Zuckerberg-Lacy interview, the audience and Twitter networks were able to coordinate very closely via the interview itself. Like a pianist's metronome, the steady stream of information presented by the interview served as a reference point for both of these networks. In a similar fashion, the audience outbursts were shared events between the two networks that allowed them to coordinate their responses.

One effect of the shared experience between the networks was that they were able to create a common response to events that occurred during the interview. Consider the "Beacon sucks" outburst. Within the audience and Twitter networks, this outburst was seen as a rebuke of Facebook's program as well as an expression of the dissatisfaction of the two networks with the general direction that the interview had taken. However, this rather specific set of reactions did not seem to register with Lacy or Zuckerberg, for Lacy in particular treated the outburst as if it were simply a request to cover the topic of Beacon, which she promised to do. Such missed signals on the part of Zuckerberg and Lacy are one of the reasons why their coordination with the two networks failed.

Information flow. Another reason for this failure in coordination between the audience networks and Zuckerberg and Lacy is that there was only a partial sharing of information between the two groups, and that information was only shared in one direction: from the stage outwards. In the first case, for instance, the audience and the Twitter network didn't know that the SXSWi organizers had requested that Lacy not hold

an audience Q&A. This lack of information sharing led to the audience assuming that Lacy herself was to blame for there not being a Q&A, and this was one of the reasons given by the audience for their displeasure with her performance. In the second case, Zuckerberg and Lacy had no means of monitoring the Twitter network, and seemed largely unaware of the negative reaction of the audience. The organizers provided no way for the Twitter network and speaker network to interact, while Zuckerberg and Lacy made no effort to monitor it on their own, having taken the stage without laptops or visible mobile devices with which they could have used for this purpose. It is possible that the lack of effort on the part of the speakers to connect with the audience played some part in the audience backlash: they were offended about being ignored.

One of the contentions I have made here is that when a communication network is insulated from contrarian viewpoints, that network runs the risk of succumbing to group-think. Such networks can then converge on conclusions—right or wrong—that are subject to confirmation bias, becoming highly resistant to alternatives. This effect is multifaceted, no doubt; yet, it is undoubtedly a rhetorical issue, and one that I think can be fruitfully studied as the product of rhetorical decisions, affected by the technological and social features of communication. The lack of diversity in the audience, which led to the audience having difficulty coordinating with alternative networks, explains why the networks were so quickly programmed in opposition to Zuckerberg and Lacy.

While it is difficult to surmise, it seems likely that, had Zuckerberg and Lacy been monitoring this network, they would have reacted more proactively to the negative feedback from the audience. One reason I believe that this is likely is Lacy's reaction

when she became aware of the backlash, at the moment when the audience member shouted that she should "ask something interesting." Many commentators who wrote about the event after it was over noted that Lacy's responses once was aware of this backlash were quite defensive. She blamed the audience and said that she shouldn't have come to "a developer conference" (Gallaga, 2008), as well as made other defensive comments. Yet, during the interview, when the audience expressed its desire to take over the questioning, she yielded the floor to them immediately. This sensitivity to the audience's desires could have played a positive role in diffusing their negative reactions, if it had been deployed more effectively and in a timely fashion.

Delivery is prior to invention. The information above suggests a unique result regarding the role of delivery in the creation of texts. While I would not go so far as to say that the structure of networks is determinative of the texts those networks produce, for networks are still made up of autonomous human actors, we can say that the program of a network plays a decisive role in the creation of those texts. As I have shown above, the way in which the networks were structured—who could and could not access them, and how the speakers were able to respond to the discourse created via the networks—are highly important parts of the ultimate form of the messages the network produces. Obviously, individuals can pre-compose, or decide to create before engaging with a network, but, at the level of the network, the choices made about the structure of the network, the inputs and outputs it can accept, and the means by which it can connect to other networks are all highly influential on the types of resonances available to the network, and both these processes are themselves highly influential on the ultimate

program of the network. And it is this program that produces the character of the texts the network produces. If we conceive of invention as a process of creating while doing, the thing being created must exist in some physical form either prior to or while being invented. While the program of the network influence the content of messages on a network, the structure of the network determines the type of messages it can carry. If the actors involved in a network no longer support the type of message produced by the network, they will reprogram it, counter it with another network, or merely abandon it. It appears that this pattern of program and counter-program is a likely interpretation of what happened in this case.

Chapter 4

Hashtag Networks and the Health Care Reform Debate

The two previous case studies, while enabled by and dependent upon new technologies, were quite traditional in key ways. The first took the form of a political debate, similar to what one would see at an extended question and answer session hosted by a politician or an informal meeting of friends discussing politics. The second was an instance of oral performance, where the audience took issue with speakers in a public forum. Each of these cases was at some level unique: the political debate involved a group of participants more diverse than one could likely find at a physical gathering of voters and relied on types of argument and evidence that were highly dependent on the medium, while the interview crowd was influenced by network effects and the insularity of the audience network. However, each case can also be easily mapped onto traditional discourse situations.

This next case study, however, is further removed from what might be thought of as a traditional discourse situation. During the campaign for the 2008 U.S. Presidential election, the topic of health care reform was an important one, and each of the major candidates introduced plans for reforming the current U.S. health care system ("Health Care Reform," 2010). After his election, the President encouraged Congress to craft and present for a vote a bill to overhaul the nation's health care system. The process that led to the development of this bill lasted for most of 2009 and the beginning of 2010, leading to the passage of a health care bill in March of 2010. This period of time was

characterized by a highly contentious national debate. In this chapter, I will examine how this debate unfolded on Twitter, tracking the Twitter posts that were tagged by their users as being about the health care reform process. The goal of this investigation will be to see how resonance and switching, program and protocol affected they ways in which Twitter users participated in this non-traditional form of discourse.

Hashtag Networks

The data discussed in this chapter consists of publicly available Twitter messages sent from September 8–10, 2009, which include the #healthcare hashtag. Twitter was home to part of the national debate over health care reform, as users expressed their opinions about the bills that were proposed in the House and the Senate, the President's proposals, the debate in the news media about these bills, the debate about these debates, and shared information related to these topics via links to outside websites. While this debate could be characterized as a conversation, in that users participate in a back-and-forth exchange of information, its scale greatly exceeds what is possible in traditional conversation. As it will become clear, networks based around hashtags have different characteristics than those based around people or events, as was the case in the previous two case studies. While this case—focused on the messages sent immediately before and after President Obama's September 9, 2009, speech on health care—contains examples of both individual-based network behavior as well as event-based networks, its primary characteristic—a network centered on a user-generated topic—led to unique results. The network is, by nature, more outward focused and displays different conversational features than networks we have seen. Additionally, it isn't clear that this network would

display the same properties as the networks discussed in earlier case studies, seeing as those networks are composed of individuals with both social and ideological connections. In this chapter, I will examine the rhetorical properties of this network, particularly as they relate to memory and delivery.

Twitter Tools

In its few years of existence, Twitter users have had a hand in developing communicative tools designed to manage the increasingly large flow of information on the site. Perhaps the most prominent of these tools are the @reply, the use of the #-sign—or hashtag—to signal a tweet's topic, and the retweet, or resending the content of another user's message. The first two behaviors predate Twitter, originating in the namespace channel and directed message protocols of IRC chats (Makice, 2009, p. 10). Early in Twitter's development, the company added @replies and hashtags to the system's architecture, and in 2009 retweets were integrated into Twitter, making them officially supported by the API (Stone, 2009). While there have been studies of how @replies (Honeycutt & Herring, 2009) and retweets (boyd, Golder, & Lotan, 2009) are used in conversations, so far the role of hashtags in Twitter conversations or network formation has remained largely unexplored.

Hashtag Uses

On Twitter, hashtags are primarily used to signal a topic of discussion. While there are differences in how the two tools are used, we can gain some insight into how hashtags are put into service on Twitter by looking at studies of retweeting. According to boyd et al. (2009), users have many different reasons for retweeting others' messages.

While many of these reasons are related to social behavior, such as "validat[ing] others' thoughts" or "as an act of friendship" (p. 6), other uses are specifically conversational. The authors note that retweets are sometimes used to extend a tweet to a new audience, to "begin a conversation" by commenting on someone else's tweet, or, in the case of a conversation involving others, "to make one's presence as a listener visible" (p. 6). As we will see in the following case study, users add hashtags to their messages for a number of reasons, from signaling that they are paying attention to a particular conversation, such as that surrounding Obama's speech, to adding information to a developing network—in this case, the Twitter network surrounding the health care debate in the United States in 2009–2010.

This latter usage, where users insert hashtags into their messages for non-conversational reasons, is one of the most interesting. The clearest distinction between hashtags and other tangentially conversational Twitter behavior like retweets is the connection between hashtags and the social tagging behavior that occurs elsewhere on the web. In their study of the collaborative tagging website Delicious, Golder and Huberman (2006) define collaborative tagging as "the process by which many users add metadata in the form of keywords to shared content" (p. 198). They go on to note that this form of tagging is a "non-hierarchical and inclusive" attempt to generate meaning (p. 199) through the "categoriz[ation]" and "label[ing]" of information (pp. 200–201). While Twitter's primary focus is not tagging information for later retrieval, users display similar behavior when engaging in tagging posts. Additionally, in the case of this data set, which does not include private messages or non-public accounts, this tagging behavior is both

"non-hierarchical and inclusive" and serves to categorize and label tweets. Therefore, while Twitter users sometimes do include hashtags in their messages for conversational purposes, such as notifying others that they wish to take part in a conversation, they also do so for purposes that extend beyond (or, alternatively, fall short of) conversation.

Golder and Huberman identify seven different tagging behaviors on Delicious: 1) "identifying what (or who)" the page in question is about; 2) "identifying what it is"; 3) "identifying who owns it"; 4) "refining categories"; 5) "identifying qualities or characteristics" of the page; 6) "self reference," such as tagging pages one wants to read later; and 7) "task organizing," such as tagging pages associated with a particular project identifier (2006, p. 203). In addition to Golder and Huberman's list, including a hashtag in a Twitter message has one other possible consequence: it serves to include the message in the network created by that hashtag. While the organizing principle for messages included in this data set is their connection to the debate over the health care reform process, many of these messages contain multiple hashtags, thereby leaving open the possibility of multiple tagging behaviors on the part of their authors.

It is this behavior—adding a message to a network—thats sets Twitter tagging apart from tagging on Delicious or other social tagging services. Tagging, like Twitter's other features, is fundamentally an attention-management procedure, in that it is designed to draw the attention of other users to a particular message. However, in the case of hashtags, this tagging doesn't merely bring the message to the attention of the user's networks, but also to users outside of their social networks. It is a process of literally writing a network into being. In this sense, digital networks created around hashtags, or

any other tagging technology, are perhaps a more direct expression of digital network behavior than are networks created around social groups. However, it is possible that even though these networks exist on Twitter in a structural sense—they can be mapped using graph theory, the number of users participating in them can be counted, the total amount of messages can be tallied—it is not immediately clear that they generate the networks of meaning for their users as did the networks in earlier case studies. That is, just because this behavior creates a structure that can be described using the node and edge language of network theory, that doesn't mean that these networks serve the same kind of social, communicative function of the networks I have examined previously. In fact, we should be open to the possibility that new technologies and methods of communication create networks with unique properties.

Network Effects in Hashtag Networks

Because of the unique features of hashtag networks, we must once again ask if we can discover the role of programming and protocol, switching, and resonance in this network. Due to this text's unique character as a product of digital networking, identifying its key features and rhetorical effects will serve an important role in our understanding of digital networking and writing. That is, by looking at this data using these techniques, we will be able to gain a different vantage point—and therefore a fuller understanding—of how digital networks are programmed as well as how they are affected by switching, resonance, and protocol. Specifically, we can ask if the greater openness of these networks leads to diversity, and whether or not this diversity leads to productive conversation and dialogue while avoiding groupthink, thereby enabling better

outcomes in the network?

Background

The President's speech on September 9, 2009, came at a low point for Democrats in the debate over health care reform.[3] After months of negotiations in early 2009, there existed three different health care plans: one was developed by the Democratic majority in the House, while the Senate produced drafts of two bills, the first by the Health, Education, Labor and Pensions Committee and the second by the Senate Finance Committee. These different bills contained unique solutions to reforming the health care system, and, by the time of the Congressional recess in August 2009, it wasn't clear which provisions of the bill would eventually be put before the two houses for a vote.

One reason for this impasse was that the President himself had not weighed in on the debate by providing his own plan or by endorsing any specific provisions that a final bill should contain. Rather, in his 2010 budget he asked Congress to set aside $600 billion to begin the reform effort and left the details of that reform up to the House and the Senate. During the Congressional recess in August, there was a backlash against the health care reform process, one that included the three draft plans being "likened on talk radio to something out of Hitler's Germany, lampooned by protesters at Congressional town-hall-style meetings and vilified in television commercials" ("Health Care Reform," 2010). The net effect of these measures on the part of those opposed to reform was to erode public support for the overall reform effort and call into doubt the possibility that these bills, or any bill, could gain passage.

[3] Dates and other factual information contained in this section were taken from ("Health Care Reform," 2010).

It was in this environment that President Obama delivered his speech on September 9 (Obama, 2009). In this speech, the President began by foregrounding the economic difficulties facing the country when he assumed office, difficulties that he acknowledged were still being felt by many Americans. In that context, he argued that, despite these difficulties, it was now the time to pursue health care reform in order to relieve the economic burden health care expenditures would place on the country in the future. In outlining the current situation, the President referenced the partisan nature of the health care debate, decrying the "scare tactics" that he claimed had replaced "honest debate," after which he specifically addressed some of the claims being made by reform opponents. One of those claims was that health care reform would provide coverage for illegal immigrants. After he stated that this claim was "false," a member of the audience, later identified as South Carolina Congressman Joe Wilson, shouted, "You lie!", an outburst that was met with boos in the chamber. The *New York Times* notes that Wilson's "outburst led to a six-day national debate on civility and decorum" capped by the Congressman being "formally rebuked" by the House on September 15 ("Health Care Reform," 2010).

The immediate result of Obama's speech was a renewed sense of urgency for supporters of the reform process, and in the following days public sentiment shifted more positively toward this reform. However, this was only a temporary shift, as the process would undergo many changes in the following months, including a period when it seemed the Democrats had no chance to pass a bill after losing their filibuster-proof majority following the death of Senator Ted Kennedy. Eventually, however, a bill was

passed through the House and the Senate, with the final vote coming on March 25, 2010. In this chapter, I will examine the Twitter messages about #healthcare that surrounded the President's speech on September 9, 2009, not as a turning point or revolutionary moment, but as a step in a complex process.

Data Set

For this case study, I used the archiving service TwapperKeeper.com to collect all the tweets containing the #healthcare hashtag from midnight September 8 to 11:59 p.m. September 10, 2009, EST. After downloading the message archive, I then split the text of these messages into groups of tweets sent on each of those three days, defining a day as midnight to midnight, and uploaded them to the text analyzer at voyeur.hermeneuti.ca ("#Healthcare Tweets: September 8–10, 2009," 2010). The goal of this data selection was to analyze the effect of President Obama's speech on the ad hoc digital network created on Twitter around the #healthcare hashtag.

Data Graphics

Accompanying many of the data points produced by voyeur.hermeneuti.ca are small line graphs that are intended to illustrate patterns in that data. These graphs, known as sparklines, are "high resolution graphics" intended to be displayed in-line with contextual information like words and numbers, thereby providing the maximum amount of data with the minimum of design (Tufte, 2006, p. 47ff.). Consider this example, a descriptive statement about the data set, showing the total number of words appearing in the data set, separated by day:

> Documents ordered by number of words (^): Sept. 8 (26,313), Sept. 9

(67,626), Sept. 10 (38,762).

The sparkline in this case, (^), illustrates the change in amount of words each day from September 9–10. The first point, at the bottom left of the graph, represents the number of words on September 8: 26,313, the lowest total of the three. Subsequently, the middle point at the peak of the graph represents the number of words on September 9, 67,626, the most of any of the days, and the rightmost point is the number of words on September 10, 38,762. This simple graphic provides a different view of the relative word totals within the text, while using the minimum of space necessary. Many of the following data points are accompanied by these sparklines, and when they appear I have included a short description of the data that each represents.

September 8–10, 2009

The following are the general statistics for the data generated by the Voyeur tool ("#Healthcare Tweets: September 8–10, 2009," 2010). The data was uploaded in three groups, representing the three days in the study, defined as midnight-to-midnight Eastern Standard Time. In the descriptions below, these separate days are referred to as "documents" while the entire data set is referred to as the "corpus."

- The corpus contains a total of 132,701 words and 12,976 unique words.
- Documents ordered by number of words (^): Sept. 9 (67,626), Sept. 10 (38,762), Sept. 8 (26,313).
- Documents ordered by vocabulary density (v): Sept. 8 (179.8), Sept. 10 (160.2), Sept. 9 (114.0).

- Most frequent words in the corpus: healthcare (7,733), http (3,918), ly (2,782), bit (2,544).
- Distinctive words (compared to the rest of the corpus)
    1. September 8: baucus (47), ga (25), gang (19), publicoption (114).
    2. September 9: download (244), vieap (243), obamas (246), school (250), tonight (197).
    3. September 10: wilson (121), last (78), joe (116), quality (61), gov (84).

Overall, there were 6,905 tweets containing #healthcare captured over the three-day period.

Table 4.1: Total messages sent per day

Day	Tweets	%
Sep. 8, 2009	1,455	0.211
Sep. 9, 2009	3,320	0.481
Sep. 10, 2009	2,130	0.308
Total:	6,905	

The fewest messages were sent on September 8, the day before the President's speech. The most were sent on the day of the address, followed by the day immediately following the address.

Healthcare

It's no surprise that the word used most frequently in this data set is "healthcare,"

which appeared 7,733 times. By definition, the word is in every message of the data set at least once as a hashtag, on top of other conversational uses. It is also not surprising that it occurs most frequently on September 9, the day when the most messages were sent. On September 9, the usage peaked during the speech, as represented by this graph  , which tracks the mean relative count of the word across all the messages sent on that day. Similarly, on September 10, message frequency peaked in the morning, presumably as users woke up and continued to discuss the speech, then tapered off as the day wore on  .

While one approach to dealing with the usage of terms like "healthcare" in this data set would be to subtract the total number of messages from the total number of uses of "healthcare" in order to arrive at the total number of non-hashtag related uses of the term (7,733 - 6,905 = 828), such a procedure is not as cut-and-dried as it might at first appear. While Twitter users frequently use hashtags merely to indicate a topic for their message and set this usage off from the other semantic content of the message, this is not always the case. Consider this message, sent by TheFreshBrew on September 9:

> GOP's too busy being angry to let facts get in the way of their #healthcare 'discussion'. #Tcot #Faketriots #DeathPanels

In this message, the author uses four hashtags. Three of those hashtags occur at the end of the message, "#Tcot #Faketriots #DeathPanels" in what can be considered typical tagging usage. However, the author also included the "healthcare" hashtag, yet he or she did so by including the word in the body of a sentence, where it also carries additional semantic meaning. This sort of usage shouldn't be excluded from the total usages of the term

because it is this kind of semantic usage that tracking term usage is designed to quantify. Further, I will argue later in this chapter that even hashtag uses that could be considered simply "tagging" a post—as with "#Tcot #Faketriots #DeathPanels" in this example—carry more semantic meaning than calling them "tags" suggests. For this reason, I have chosen to merely count the number of usages of words in the data set, discussing their broader implications later in the chapter.

Links

When common words like "and" and "the" are eliminated from the data set, the second, third, and fourth most common words are "http," "ly," and "bit," the elements that make up a URL generated by the popular link-shortening service found at http://bit.ly. Voyeur separates the parts of a link into sections based on punctuation marks that appear in the URL (".", "/", and ":", for example), therefore the analysis returned separate values for these three link elements ("#Healthcare Tweets: September 8–10, 2009," 2010). Measured by the presence of "http" in the data set, in the 6,905 total messages 3,918 URLs were shared. The following table shows the number of links shared, measured by usage of "http," broken down by day and as a percentage of total messages sent:

Table 4.2: Usage and frequency of "http"

Day	"http"	%	freq.[4]	Total Tweets	% total
Sep. 8, 2009	1,012	0.258		1,455	0.696
Sep. 9, 2009	1,626	0.415		3,320	0.489

[4] These graphs represent the value of the mean relative counts of "http" as it appeared in messages sent each day.

Sep. 10, 2009	1,280	0.327		2,130	0.601
Total:	3,918			6,905	0.567

Clearly, Twitter users shared a significant number of links on the #healthcare network, utilizing Twitter's capacity for switching, as with the Culberson network. Compared with the other two days, links were shared less frequently on September 9. In the exact opposite of the use of "healthcare," the value of the mean relative counts of "http" , "ly" , and "bit" reached their lowest points late in the day on September 9, during the President's speech.

Obama

After "healthcare" and the use of links, the most common word used across the three days was "Obama." The word appears 2,120 times in this data set. Since it is more accurate to view the elements of links less as words than as markers of switching behavior, this would make "Obama" the second most common word in the set, appearing almost 1,000 times more than the next most frequently used word, "health," which appeared in the data set 1,194 times. The following table shows how often "Obama" appears in the data set each day, the percentage of appearances each day and the frequency of its appearance across the body of the data set on each day.

Table 4.3: Usage and frequency of "Obama"

Day	"Obama"	%	freq.[5]

[5] Sparklines represent the value of the mean relative counts of "Obama" as it appeared in messages sent each day.

Sep. 8, 2009	192	0.091	
Sep. 9, 2009	1,334	0.629	
Sep. 10, 2009	594	0.280	
Total:	2,120		

Usage of "Obama" peaked on September 9, the day of the President's speech .[6] The graph representing September 9 actually reached its highest point in the morning  . This was the result of the repeated posting of a spam message referencing Obama's "school speech" that was posted in one of two forms 243 times between 6:08 and 6:09 a.m. that morning. The data analysis also contained separate entries for uses of "Obama's" (517 uses), "Obamas" (248 uses; however, 243 of these uses were in the "school speech" spam messages), and "president" (424 uses). When these totals are added to uses of "Obama," the President was referred to 3,309 times in the data set. As with "Obama," the frequency of these uses peaked on September 9, with the exception of "Obama's," which was used more frequently on September 10 [7].

Retweets

The following table shows the number of times "RT" was used in the data set across the three days.

[6] This graph charts the "variation in the relative frequenc[y]" of the word "Obama" from September 8–10.
[7] This graph charts the "variation in the relative frequenc[y]" of the word "Obama's" from September 8–10.

Table 4.4: Usage and frequency of "RT"

Day	"RT"	%	freq.[8]	Total Tweets	% total
Sep. 8, 2009	391	0.208		1,455	0.269
Sep. 9, 2009	984	0.523		3,320	0.296
Sep. 10, 2009	506	0.269		2,130	0.238
Total:	1,881			6,905	

As with "healthcare" and "Obama," the frequency of retweets increased during the time of the President's speech on September 9. While the most retweets were sent on September 9, September 8 had the highest relative frequency of RTs of any day in the data set. This result seems to suggest that during the speech there was more conversational activity on the network than on other days (boyd, et al., 2009). Following Honeycutt and Herring's (2009) finding that @replies signal conversational activity, this conclusion can be supported by the relative number of directed messages on the three days. The following chart represents the number of messages directed to another user via @replies on the three days (though not necessarily all uses of *@username*, such as in retweets):

Table 4.5: Number of @replies in data set

Day	@reply	% @	Total Tweets	% total
Sep. 8, 2009	141	0.246	1,455	0.097

[8] Sparklines represent the value of the mean relative counts of "RT" as it appeared in messages sent each day.

Sep. 9, 2009	270	0.471	3,320	0.081
Sep. 10, 2009	162	0.283	2,130	0.076
Total:	573		6,905	

These numbers suggest that the most directed-message activity occurred on September 9; of the 573 total @replies sent in the three days, 270, or 47.1%, were sent on that day. However, if one looks at the percentage of total tweets for each day that were @replies, the numbers are different. The day with the highest percentage of messages containing @replies was September 8, when 9.7% of the messages were replies, while the 9th and 10th were the second and third highest with 8.1% and 7.6%, respectively.

Joe Wilson

The most discussed single event during the President's speech was Congressman Joe Wilson's outburst, when, after Obama claimed that the health care proposals on the table wouldn't cover illegal immigrants, Wilson stood up and shouted "You lie!" Television commentators weren't immediately sure who had made this outburst, but at 8:54 p.m. EST, seven minutes before the President ended his speech at 9:03 p.m. EST (Obama, 2009), Twitter user gerryblog had retweeted a message from PoliticsNation identifying Wilson as the shouter. However, the message noted that this information was not yet confirmed.

The following table shows the uses of "Joe" and "Wilson" across the three days:

Table 4.6: Usage and frequency of "Joe" and "Wilson"

Day	"Joe"	%	freq.[9]	"Wilson"	%	freq.[10]
Sep. 8, 2009	0	0.000		1	0.005	
Sep. 9, 2009	94	0.448		83	0.405	
Sep. 10, 2009	116	0.552		121	0.590	
Total:	210			205		

The failure of the usage numbers for these two terms to be the same—that is, for every usage of "Joe" there is only one usage of "Wilson"—represents uses of the two words that don't refer to the congressman. As the daily usage graphs indicate, mentions of Congressman Wilson spiked at the end of September 9 and beginning of September 10 as the report that he had caused the outburst was verified. The most messages mentioning Wilson were sent on September 10, with usage peaking in the early morning hours then again in the middle of the day.

TCOT and P2

The #healthcare hashtag was not the only one used in this network, although it is the one around which the network formed. The second most frequently used hashtag was #hcr, an abbreviation for "health care reform," another popular tag used on Twitter to denote messages related to the health care reform process. This tag was mentioned 1,257

[9] Sparklines represent the value of the mean relative counts of "Joe" as it appeared in messages sent each day.
[10] Sparklines represent the value of the mean relative counts of "Wilson" as it appeared in messages sent each day.

times over the three days in which data was collected. Since this tag serves much the same purpose as #healthcare and was in all cases used in conjunction with #healthcare, I have chosen not to focus on it.

The next most popular hashtag was #tcot, an abbreviation for "top conservatives on Twitter." This hashtag is commonly used to denote messages either posted by members of the conservative community on Twitter or meant to attract the attention of that community. A similar (though less popular) hashtag, #p2, short for Progressives 2.0, is used by the progressive community. The Voyeur tool tracked uses of "p", instead of p2, including a few cases where the letter was used at the beginning or end of a shortened url—such as "http://bit.ly/P7b1". However, the majority of uses were of the #p2 tag. To find the exact number I counted them manually. The graphs in the far right column of the following table were generated for the frequency of "p" as it occurs in the data set.

Table 4.7: Usage and frequency of "tcot" and "p2"

Day	"tcot"	%	freq.[11]	"p2"	%	freq.[12]	Both	%
Sep. 8, 2009	120	0.153		160	0.289		15	0.181
Sep. 9, 2009	344	0.438		273	0.495		41	0.494
Sep. 10, 2009	322	0.409		119	0.216		27	0.325
Total:	786			552			83	

[11] Sparklines represent the value of the mean relative counts of "tcot" as it appeared in messages sent each day.
[12] Sparklines represent the value of the mean relative counts of "p" as it appeared in messages sent each day.

Over the three days, #tcot was used 234 more times than #p2. While the later tag was used less frequently, the two tags followed a similar usage pattern as other tags: random uses on the 8th, and a spike in use on the morning of the 10th. However, these two tags seemed to spike in use earlier in the day on the 9th, rather than during the President's speech.

Discussion

As I have already mentioned, compared with the previous case studies, the #healthcare hashtag network appears to not have an analogue in pre-digital communication. The discussion around Culberson's comment could be compared to a freewheeling conversation, albeit one with a large number of participants, while the Zuckerberg-Lacy interview was in its basic form, a connection between audience and speakers. However, the network generated by the #healthcare hashtag is not like a conversation, nor is it like a speaker-centered discourse with an audience, although it does contain elements of both. In their study of @replies on Twitter, Honeycutt and Herring (2009) discovered that the @-sign was used in roughly 30% of all tweets sent on the network. However, they counted only the use of the @-sign in each message, making no distinction between @replies and retweets. If the number of retweets and @replies in the #healthcare network are combined, it appears to roughly confirm their results, with daily usage of @replies and retweets adding up to 36.6%, 37.8%, and 31.4%, respectively. The question remains as to how many of these messages are conversational. Data from other studies (boyd, et al., 2009) suggests that retweets are not always conversational, and that appears to also be the case here. Rather than conversation, one of

the primary intentions of authors within the network appears to be bringing their messages to the attention of the network.

Resonance and Switching

Resonance. The most obvious resonance in the #healthcare network was with President Obama's speech. This appears to be corroborated by the fact that the speech coincided with a large uptick in messages posted to the network. The number of messages sent on September 9, 3,320, more than doubled those sent the day before the speech, 1,455. This effect carried over to the next day, with more messages being sent after the speech than before it. One could argue that this uptick was a coincidence; however, these messages seem to have been related to the speech since many of the indicators tracking the speech—words like "Obama" and "Wilson," for example—were used with the greatest relative frequency early in the morning of September 10, then taper off throughout the day. This event acted as what Maturana and Varela (1980) call a perturbance, an alteration in the network's normal behavior that was stimulated by a non-internal influence.

The #healthcare network was, of course, perturbed by other events. The high number of links shared as part of the network—out of 6,905 messages 3,918, or 56.7%, contained links—suggests that members of the network were making specific attempts to connect outside events such as news reports, third-party commentary, or individual blog posts to the network. However, the increase in the use of "healthcare" in the messages sent on September 9 suggests an increase in messages sent during the speech, and the decrease in the number of links shared during the speech suggests that typical behavior of

the network changed during the speech. In other words, the normal behavior of the network was the sharing of links in roughly half of the messages. However, during Obama's speech, this behavior changed as far fewer links were shared. Specifically, the decrease in the number of links being shared, combined with the increase in terms directly related to the speech, underscores the enormous effect the speech had on the network. Rather than sharing links, which was extremely common in the data set, users focused on commenting on the President's speech or sharing quotes from it rather than linking to external websites.

While this behavior could be considered the equivalent of the event-based behavior seen in the Zuckerberg-Lacy interview—relatively few links were shared in that network, as well—this network demonstrates the role that perturbing events have on networks when resonance occurs. When there is no event occurring, the network centers on the tag, which is typically used to identify the subject of uni-directional (as opposed to conversational) messages. That is, users post irregularly to the network on topics of personal interest, but because those posts aren't coordinated with any single event they appear randomly and the network as a whole has no common subject matter. In contrast, when there is an event that resonates with the network, such as the speech, an emergent coordination around that event appears in the network. One conclusion that could be drawn from this result is that, because hashtag networks don't generate much conversation, they are far more dependent on the input of material from outside sources to maintain their existence, that is, their sources of new information. For this reason, perturbances that resonate with the network are necessary for its survival. While social

networks survive on relationships, topic-based networks do not have this underlying structure to support them when there is little new information to be shared. While I may go months or years without talking with a school friend, our basic relationship persists, and new communication between us is always possible. However, in a network that lacks such internal connections, months or years without new input would inevitably lead to the demise of that network. Such a network that contained no content would cease to be a network, discouraging future participation. As a result, it appears to be significant that hashtag networks are formed around external topics. The tweets in the #healthcare network, while reliant on Twitter, were fueled in many cases by incidents that occurred outside of the Twitter network. They are essentially resonance dependent; that is, they wouldn't exist without perturbances like the President's speech.

Of course, perturbances are only important insofar as they lead to resonance with a particular network. As Luhmann (1989) argues, what an organism can interact with is dependent upon its internal structure. That is, if a structure does not have the apparatus for observing something, that something is effectively non-existent with regard to the structure. Extending this idea to networks (Castells, 1997, 2000a), either those based on social networks or other structural forms, the network can't see what lies outside itself. These networks literally can't see what they can't see. For this reason, the role of switchers is crucial for the network, not just so the network can interact with other networks, but also so those other networks can interact with it. Not every external event will cause a perturbance as significant as the President's speech. For example, on September 8, the President addressed the nation's school children in a speech that was

criticized by some Republicans as an attempt to indoctrinate school children. While there were some mentions of this event on the 8th, they were primarily the result of a concerted campaign by spammers, who sent over 200 messages mentioning this event on September 9. However, the lack of interest in this topic by non-spammers suggests that it did not catch on. In her study of an email discussion network, Syverson (Syverson, 1999) documents similar cases of perturbances, some of which greatly affected the network and others that did not. While it is not always clear why some perturbances do have a large impact on a network, following Luhmann and Castells, I argue that it is necessary for those perturbances to resonate with the program of the network and not violate its protocol.

Switching in hashtag networks. The ways in which outside events impacted the #healthcare network suggests that, if the network wasn't visible to other networks, then it wasn't going to make an impact on conversations. In this context, attempts by users to connect their messages with other networks via the addition of additional hashtags, such as #tcot and #p2, appear to be attempts at switching. While the messages in the #healthcare network are focused on a particular topic, messages in these networks are largely organized around ideological similarities between network participants. The presence of messages that overlap these networks suggests that there might be multiple intentions of authors of these messages evidenced by their use of these tags.

Consider the following messages sent on September 8:

> @NadiartTwo We hate liars also. Tell the truth! #healthcare bill funds #abortion #rations care increases national #debt. #tcot

18000 US citizens die yearly because they can't access #healthcare that = six 9/11s http://tinyurl.com/omyl3s #p2 #hcr #czarsresign

RT @TCTaxTeaParty: 1000000 Brits currently waiting 2 B admitted 2 a hospital. Still wnt #socialized #healthcare? http://bit.ly/Kjp7c #tcot

Does Max Baucus Represent Montana or Blue Cross? http://bit.ly/8hiCL #Baucus #healthcarereform #hcr #p2 #hc09 #publicoption #healthcare

After LBJ passed Medicare #healthcare costs for following 10 yrs. DROPPED as a result of GDP. #hcr #p2 #topprog

Thanks to all of my Twitter followers 4 putting me over 16000 followers. I'll keep U informed on #tech #healthcare #tcot #prolife #teaparty

While it is possible that the last message was sent by a progressive, the use of the #tcot and #p2 tags appears to be a strong indicator of the ideological orientation of the message's sender. Additionally, these messages suggest the frequency at which individuals in the #healthcare network attempted to connect it to other networks. While each of these messages includes the #healthcare tag as well as either the #p2 or #tcot tag, the following tags also appear: #abortion, #rations, #debt, #hcr, #czarsresign, #socialized, #Baucus #healthcarereform, #hco9, #publicoption, and #topprog. While some of these tags appear to be attempts to include the messages in similar networks—#hcr, #healthcarereform, and #hc09 are similar to #healthcare, while #topprog is a progressive answer to #tcot—others have more idiosyncratic uses, such as #czarsresign, a tag that was used numerous times by the author of this message on September 8, but doesn't show up elsewhere.

The question remains: what is the result of this type of switching; that is, including multiple hashtags in the same message? We have seen that it can indicate that a particular message concerns a topic like health care, that it signals the ideological orientation of the author, or that it provides some other information—like #czarsresign—in a way that uses few characters. Do they, however, only serve these sorts of tagging purposes? One interesting case is that of messages that include both the #p2 and #tcot tags. These two tags were sometimes used together—that is, both appeared in the same message—83 times over the three days covered in the data set.

Here is a small sample of messages using both tags collected from the data set:

> Republicans apparently think we are over insured! http://tinyurl.com/kqp7n2 #healthcare #hcr #hc09 #topprog #p2 #tcot #ocra
>
> Anyone want to SHOW me (IN THE BILL) WHERE it says that Obama was lying about not providing #healthcare to illegals? #tcot #tlot #p2 #hcr
>
> Obama's Newest #Healthcare Sales Pitch: Lies and Damned Lies & I Mean HIS! http://bit.ly/1TiF05 #tcot #tlot #p2
>
> Pancy Nelosi homeless constituents from CityByTheBay think "Public Option" is when you crap on the sidewalk. #tcot #p2 #healthcare

These messages share characteristics that appear throughout the entire data set. They share links, connecting the #healthcare network to outside sources. They use multiple, sometimes semantically repetitive, tags to indicate the topic of the message and to connect the message to multiple networks. Yet, as we have seen, the uses of certain tags

appear to be ideological indicators. That is, rather than merely indicating the topic of the message, they suggest the ideological leanings of the message. That being the case, what is the goal of including tags that denote different ideological groups like #tcot and #p2? As this selection makes clear, this behavior wasn't dominated by one or the other ideological group, as these messages betray both conservative and progressive inclinations. The first two appear to be progressive in nature, while the latter two conservative.

The inclusion of both the #tcot and #p2 tags seems to either be a direct or indirect overture towards conversation. The first message above appears to be written from a progressive point of view, and explicitly attributes a claim to Republicans, as if to invite Republicans to refute or challenge it. The link the author shares is to a post on the website *Mother Jones* describing the claims of Democratic congressman Alan Grayson against Republicans (Gettelman, 2009); the fact that the article doesn't quote actual Republicans suggests that the author of the tweet is calling for a conservative, or #tcot, response to this charge. The second message is explicitly a call for a response from those, like the author of the third message, who claim like Joe Wilson that Obama lied in his speech. That third message is a link to the author's blog post, another seeming overture to conversation, at least on the blog. The final message, seems more in the vein of the first: a joke told at the expense of Speaker of the House Nancy Pelosi, and it seems to be a provocation to progressives, inviting a response (or, at least, a reaction). These messages suggest that, while uncommon in the network, overtures to conversation exist, and one method used for making these overtures is through switching behavior.

Switching and social networks. The use of hashtags from other networks is not, however, the only method of switching evident in the network. While not as prominent, @replies and other conversational tools like retweets were used to generate connections between users who may not necessarily be part of the same social networks. That is, they connect users who may be in disparate social networks and are only united by their connection via the hashtag network. One way in which this type of switching occurs is through the repetition of hashtags in replies and retweets.

For example, user KineticMoment posted the following message a number of times in the late evening of September 9:

> @dawterofliberty Joe Wilson for President 2012! #obama #pelosi #healthcare #speech #youlie #joewilson #hcr #hcrfail #takebackamerica #themob

While this user posted the message by itself a number of times, s/he also posted it as a reply to users, like dawterofliberty, that otherwise did not post messages to the #healthcare network. These messages serve as both conversation starters and continuers—it's not clear which messages KineticMoment was replying to, although it would seem that s/he was replying to messages about Joe Wilson. They also are invitations to the network, or reminders to users like dawterofliberty to include the hashtag in their messages as well. Similarly, retweets that include the hashtag serve to connect the #healthcare network to users in the retweeter's network that might be otherwise unaware of the network. The high number of retweets and @replies in the network (over a third of messages in the data set) suggest that this type of switching

behavior was common, although it is not clear how effective it was.

Program and Protocol

At its most basic level, it would appear that the program of the #healthcare network was primarily to classify posts as being relevant to this topic. While conversations are initiated by messages in the network, these conversations do not constitute a significant part of the network's output. Rather, the network seems to be dominated by tagging behaviors.

Protocol affecting program. This begs the question: why is the network programmed in this way, and why are conversations marginalized? One reason might be that including hashtag information in an @reply is not an automatic behavior on Twitter. For example, @replies are part of the Twitter framework and are almost universally supported by third party applications. When a user wants to reply to the message of another user, he or she simply initiates the reply, usually by clicking on a button for this purpose, and Twitter recognizes this behavior as an @reply by adding the username of the user being replied to the beginning of the message. In late 2009, third-party clients provided similar automated processes for retweets even before Twitter officially added support for this type of message. Initiating a retweet would automatically add the text "RT *@username*" or some variation of this text and copy in the original message to the new message being created. However, there were few such automated methods of including hashtags in replies or participating in a hashtag network. Although some Twitter clients would append hashtags to the end of messages as part of @replies, most would not, requiring users to manually type the hashtag into all messages that she or he

wished to be included in the network. Because of this non-automated portion of what was largely an automated process, it is possible that some conversations that users saw as having to do with the #healthcare network weren't included in it merely because the authors forgot to include the tag in an @reply. Additionally, hashtags may be removed from messages like @replies or even retweets because of Twitter's restriction on message size. In short, it appears that there were major protocological hurdles to the perpetuation of conversations in hashtag networks, and these hurdles directly affected the program that emerged for this network, namely to merely tag and catalog information related to health care.

Alternatively, the #healthcare network could have been programmed in this way because conversations are less likely in networks that are not formed around social networks or ideological affiliations. Because the network is relatively open to individuals with different ideological allegiances, as seen in the users posting with #p2, #tcot, and related tags, then it is not surprising that meaningful conversations were less likely to develop here than they would be in situations where users are connected to each other socially, as with the Culberson debate, or geographically, as with the Zuckerberg-Lacy interview. The especially polarized nature of the health care debate—which in September 2010 was characterized by the particularly rancorous town hall meetings during Congress' summer recess ("Health Care Reform," 2010)—seemed to have a large effect on the conduct of this network.

In general, hashtag networks have unique protocological profiles because they aren't formed around a traditional source of authority, such as a person or event. For this

reason, they are more open, a fact that encouraged a larger breadth of diversity in the network, but also made that network a more appealing target to spammers, as I will discuss below. Further, the conflicting protocols of the Twitter website and third-party applications had the effect of making some protocols less common than others. That is, a behavior supported by one app but not another would affect some users, and through them the network, but not all users, thereby limiting, and in some cases marginalizing, those effects.

Network inclusion as information channel. One of the motivations for including hashtags in Twitter messages is the fact that these tags carry a high-degree of information in a compact (that is, low-character count) message. For example, #healthcare is fewer characters than "this link is about the health care debate," while #tcot or #p2 are much more compact ways of a user saying "this message comes with an ideological viewpoint" or "this message is of interest to others with this ideological viewpoint." While it is not clear from looking at the data in this network alone what the intention of an individual author is in using a hashtag, the motivation towards compact communication would also result in fewer conversations, if only because network creation, and whatever conversational opportunities it provides, would be secondary results of the inclusion of tags, rather than primary ones.

Spam. The protocological characteristics of the network had the effect of marginalizing behaviors that seek to monopolize the openness of the network. One example of such limitation were the attempts at spamming the network, such as that seen in the large spam publications on September 9. In this context, I'm calling spam those

messages that repeat the same information, but are directed to different users or repeatedly posted to the network from multiple accounts. As I mentioned in the previous section, while these spam messages were generated at a high volume and dominated the network in the early hours of September 9, they seemed to have very little effect within the network, generating few responses. In fact, the nature of the network, which included all the messages, probably served to make clear that they were spam, rather than original messages. While the spammers used unique Twitter user accounts to send the messages, the high number of similar messages sent to the network at the same time, without typical markers that would flag them as retweets or parts of a conversation, most likely signaled that the messages were marketing spam. Further, if someone was inclined to share the message, they would be limited by the lack of automation described above, leading to it being unlikely that that message would be shared with the #healthcare network. In short, the protocological features of Twitter played a large role in shaping the program of the network, limiting conversation and interaction between users.

Memory and Delivery

The question running through this project is: what do memory and delivery look like when communication is embodied on digital networks? I suggested that memory for digital networks would take the form of resonance, and switching between networks would be a key rhetorical skill. For delivery, I argued that the protocol of networks, by which I mean the rules, both technological and cultural, which determined how the network behaved, were the digital network's equivalent to the body. That is, they represent the physical restraints that must be taken into account when dealing with digital

networks. Similarly, the program of the network represents an emergent property of communication that has to be addressed in order for rhetors to make effective use of the network for rhetorical purposes. While it has been possible in the previous two chapters to examine what memory and delivery for digital networks look like in situations that are very similar to familiar forms of pre-digital communication, this case study provides a special challenge: can the communicative features of a network that has perhaps no pre-digital analogue be described in these terms? Does the focus on bringing structures into coordination via memory and operating within the physical constraints of a medium provide us with any insights into the workings of hashtag networks and their best rhetorical uses? In this section I will address these questions with regard to the #healthcare hashtag network, hoping to generalize from this situation to other, similar networks.

Conversation and Meaning

As noted in the above analysis, this network didn't develop into a meaningful conversation during the three days under investigation. While there were some attempts to create dialogue between users—such as with the use of @replies and the attempts by some users to cross-post their messages to other networks—these were in general the exception to the normal network practice. The most common behavior on the network, the one that I argue emerged as its program, was the attempt to categorize and share information about the topic in question: health care. The vast majority of messages referred to the ongoing debate over health care reform in the House and Senate. In that regard, the network that resulted, while structurally a network, did not result in the kinds

of rhetorical effects that we saw with the Culberson and Zuckerberg-Lacy case studies. The lack of interactions between users of the network prevented meaningful conversation—that is, conversation that leads to altered behavior—from developing.

Alternative explanations. Can this lack of meaningful, sustained conversation be attributed to some other rhetorical process? One explanation would be that authors in the network did not accurately judge their audience, and therefore were unable to connect with them for substantive back-and-forth on this topic. Such a claim would be familiar to rhetorical analysis, because rhetoricians have traditionally been concerned with the nature of the audience and how that audience can be most effectively appealed to. But who is the "audience," and how can that audience be addressed? In the first two cases, this question can be answered fairly easily. For Culberson, the audience was his followers, and that audience eventually broadened to include the readerships of the news organizations and blogs that promoted and shared information about the debate. For the Zuckerberg-Lacy interview, the audience was the Twitter users who participated in the discussion and, eventually, Zuckerberg and Lacy themselves, who were forced by the physical audience to pay attention to them and hear what they had to say. In each of these cases, my analysis detailed the features of these audiences that held them together; that is, what they had in common. For Culberson's followers, it was a sense that Culberson was a direct source of information and that he was amenable to conversations with them. For Zuckerberg and Lacy, their failure was in not acknowledging the audience's desire to be heard and have their feedback taken into account during the proceedings.

But those two cases differed from the #healthcare network in that they each had a

locus that could serve as one part of a speaker-audience dyad: Culberson and his followers, Zuckerberg-Lacy and the twittering crowd or the physical audience and the Twitter audience. The only possible such locus in the #healthcare network would have been President Obama, but he injected very little into the network itself, except via the speech. However, it would be difficult to claim that this speech was directed to the #healthcare network in particular, and, at any rate, there was no conversational back and forth between the network and the President. Although Obama has a Twitter account (@BarackObama), it is largely used to distribute press releases, and it is highly unlikely that the President himself updates the account. Rarely (if ever) does the person running the account engage in dialogue with other Twitter users. Perhaps this is the reason that in the entire data set only fifteen messages were addressed to Obama's account via the @reply method of putting the recipient's username at the beginning of the message. (Around ninety messages referenced the account in other ways.) While the crowd at the Zuckerberg-Lacy interview expected that the speakers would attend to their messages, there doesn't seem to be a similar expectation on the part of the audience for the President's speech. There are some examples of direct address in the data set, where users make declarative commands directed towards the President. For example, on September 8, MaryAnne_Jones wrote "@barackobama @whitehouse - Disband the GANG of 6 against American's wants!!!! #hcr #hc09 #healthcare #healthcarereform #ff #puclicoption." Yet cases such as this one seem to be examples of merely addressing the President for effect, rather than attempts at genuine dialogue, or even cases where the speaker expects a reply.

Of course, one can think of the "audience" for the #healthcare network as being the entire network, which each user is addressing when making a post. However, this audience is almost hopelessly diverse, a situation that makes effective attempts to appeal to this audience rare. Retweets could be considered examples of effective posts, but the small percentage of these types of messages in the total data set suggests that such connections were rare, and, even then it isn't clear if the retweets weren't in fact motivated by other connections, such as in the original author's personal network, or that the hashtag wasn't included merely as a result of the retweeting function. Similarly, one could point to instances of spam as a case where a coordinated attempt to influence the message of the network failed, but the apparent failure of this spamming could merely reinforce the idea that appealing to the audience comprised by the network is a perilously challenging job. In short, while one could claim that the failure of the network to move beyond a program of merely tagging information is a failure in audience appeal, such a claim would not seem to address the difficulty in talking about the network "audience" in a meaningful way.

Failure of style. A second possible explanation for why there wasn't significant conversational activity in the #healthcare network is that it didn't grab the attention of others through the use of stylistic techniques. According to Lanham (2006), style is the primary means of attracting the attention of others in electronic communication. If most of the messages in the network failed to generate responses in the network, then one could argue that this was the result of those messages not having a style that was engaging enough to capture the attention of other users. However, this assumption

suggests the alternative, that in cases where messages do generate responses in the network, these responses must be the result of effective use of style by the author of that particular message. While this could sometimes be the case, such examples are rare in these case studies. Culberson's initial "censorship" tweet—in fact, most of his tweets—were not distinguished stylistically, yet they provoked a debate in the national media. Similarly, major events of resonance and switching in the Zuckerberg-Lacy case, such as the "Beacon sucks!" outburst, weren't especially witty or stylized. Rather, they were moments of effective connection between the Twitter network and other networks. In each of these cases, the primary factor leading to the importance of a message in the network could best be described as an expression of network power, not expert stylistics. Culberson's message was important because he held a position of authority in his network that was derived from his job. The "Beacon sucks!" shouter effectively switched between the audience and the Twitter network at a time when such connections would reaffirm the Twitter network's tendency to criticize the speaker. Based on these examples, it seems likely that incidents of connection evident in the #healthcare network are similar expressions of power, as important messages are retweeted through a user's social network and reposted to the #healthcare network via retweeting protocols and breaking information, such as Joe Wilson's identity as the "you lie!" shouter, was shared with a wider audience.

While I don't wish to discount the importance of appealing to an audience or using effective style, I do suggest that a more plausible explanation for why the #healthcare network did not develop any sustained interaction between individuals within

the network can be provided in terms of network protocols and the program. Resonance doesn't occur because of lack of common ground. Switching is ineffective because of lack of persistence of conversations. Twitter protocols, which encouraged engagement in other networks, don't include hashtags in replies, limiting conversation in the #healthcare network. The emergent program of the network resulted from this choice on the part of the programmers. In short, while there was rhetorical activity evident on the network on the part of individual users, the rhetorical impact of the network was effectively nil.

Memory

As I have argued earlier, memory in traditional formulations of the canon can be viewed as a process of coordination between a speaker and a text. An effective display of memory would result in an accurate or appropriate recollection of the text, which itself would be a demonstration that the coordination had taken place. Such coordination is displayed in instances of resonance, some of which are facilitated by effective switching between networks, all of which depend on communication technologies—language, writing—to enable coordination between separate entities. One example of this sort of resonance is in the Culberson case study: effective switching, between blog posts and Culberson's Twitter network, along with his resonance with his followers, changed Culberson's view of his behavior, causing him to moderate his reaction to his Democratic colleagues in the House. While it did not lead to Culberson renouncing his original claim, the pressure from these other networks had an effect on his argumentation, and, ultimately, his behavior on the network. This resonance was the result of his projection of himself as someone able to find common ground with a diverse group of individuals,

such as with his Twitter followers.

As mentioned earlier, there was little common ground on the #healthcare network. While some users clearly engaged with each other, it is more accurate to identify their connection as coming from their identification with other networks, such as with #tcot or their personal social networks. As such, there were relatively few instances of directed messages in the network; however, the percentage of directed messages like @replies and retweets was similar to that found in a random sample of tweets by Honeycutt and Herring (Honeycutt & Herring, 2009). This result suggests that the #healthcare network was similar in structure to the broader Twitter network; that is, all the messages sent on Twitter. Because the entire Twitter network is largely discontinuous, that is, its structure is quite different from that of a more localized network like those in the first two case studies, the similarity between that network and the #healthcare network suggests that the latter is also highly fragmented, as other evidence in this case suggests.

In other words, the instances of intra-network connections, and consequently the network's potential for resonance, were extremely rare. This network is different from those in the previous case studies in that the participants often had little in common. Whereas the other networks had at least some measure of common ground that served to determine who was part of the network and who was not, the #healthcare network had an extremely low barrier to entry. Anyone with a Twitter account could participate in the network by typing "#healthcare" in the body of a status message. The fact that Twitter had grown an estimated 1,382% between 2008 and 2009 (Ostrow, 2009b) suggests that the makeup of Twitter's user base in September 2009 was quite different than even during

the Culberson incident in July 2008. Due to the low barrier to entry to the network, the individuals constituting the #healthcare network were quite diverse, yet within this diversity there were pockets of similarity. Participants in #tcot, for example, posted heavily to the #healthcare network. For this reason, most participants had many like-minded individuals with whom they could connect. Therefore, there was little need for users of different viewpoints to engage with each other. Or, to put it differently, users who had nothing in common other than posting a #healthcare topic to the network had little reason to engage each other. Unlike the Zuckerberg-Lacy audience, which had too little diversity and therefore fell prey to groupthink tendencies, this network had too much diversity, and, paradoxically, this greater diversity within the network led to fewer connections between participants.

Evidence of this lack of connection within the network can be seen in references to Congressman Joe Wilson, who yelled "you lie!" during the President's speech. In instances where users championed or criticized Wilson, there was a tendency for the author to take either the outburst or its content as reinforcing their ideas about the health care reform process. For progressives and those who disagreed with his behavior, Wilson seemed to embody the obstructionist qualities that democrats attributed to Republicans in the House and Senate during the debates over the health care bills. For those who agreed with Wilson's claim, he was a brave example of someone speaking truth to power. In both cases, outside networks, conservative and liberal, drove the reactions to this outburst, and there was very little reasoned debate on the issue evident on the network. These reactions can certainly be seen as points of resonance with other networks, whether or not those

networks are viewed as #tcot or #p2 or just the communities of conservative and liberal thought that transcend technologies and exist in cultural relations as well. However, the relevant switching occurred between these networks and the larger network, and there were no significant interventions between #tcot and #p2, the sites where such an intervention appeared to be necessary. The use of #tcot and #p2 by authors in the #healthcare network were failed attempts at switching because they produced no significant effect in that network. In a network this large, with such difficulties preventing it from generating conversations, opposing opinions can simply inhabit separate corners and ignore the opinions of others.

The lack of persistence in the #healthcare network is likely the reason that there were few examples of effective switching in the network. In order for switching to take hold and lead to resonance, it is important that there be some persistence of information that can be referenced and that has an opportunity to be accessed by users viewing the network at different times. Because there were so few conversation threads or similar forms of engagement that would lead to multiple users finding the same topic, switching that depends on this activity was more difficult and therefore relatively rare in the network.

Delivery

I have argued that in the case of digital networks, delivery should be concerned with the protocols of those networks and their emergent programs. These features of networks constrain what can be communicated on digital networks, and rhetors must be aware of those constraints in order to effectively utilize digital networks for rhetorical

purposes. Protocol and program are frequently connected, and in this case study it appears that the protocol specifically limited conversations. One effect of this limitation was that the program of the network emerged as mere information sharing, rather than conversation.

One interesting feature of the #healthcare network is the lack of groupthink it developed, particularly when compared to the Culberson debate or the Zuckerberg-Lacy interview. While both of those networks converged on dominant opinions fairly quickly, the #healthcare network never appeared to arrive at such a consensus. If one were to take almost any group of messages from the network at any one time, it is possible to find in them a range of opinions reflecting different ideological viewpoints about the health care reform debate. Clearly there were significant perturbances that affected the network in a broad way. The President's speech and the Joe Wilson incident, to name two, illustrate the network's responsiveness to external events. This responsiveness resulted in a high degree of consensus about events being posted to the network, undoubtedly aided by the mass media coverage which mediated most Twitter users' viewing of the event, even though there were differing opinions about how these events should be interpreted on the network. In each case of outside perturbance, there is evidence of significant divergence in ideological viewpoints on these events throughout the course of the discussion.

In the previous section, I attributed this result, in part, to the failure of resonance and effective switching within the network. I have also suggested a protocological reason for this failure: the lack of persistence of hashtags in @replies and other conversational behaviors in Twitter. Because Twitter (and many third-party Twitter clients) failed to

automatically include hashtags that appeared in a message in a reply to that message, the @reply-based conversations that appear in the first two case studies are largely absent from the #healthcare network. While efforts were made on the part of network participants to make connections between networks, most notably in the inclusion of different ideological indicators in the same message, such as #p2 and #tcot, whatever conversations might have been the result of this behavior were not captured in the #healthcare network because the "healthcare" hashtag was not included in the replies. The protocol of Twitter, then, was possibly a contributing factor in the lack of sustained conversation evident in the #healthcare network.

In the previous case studies, a tendency towards groupthink, or the convergence of the network on a non-ideal solution without having explored other solutions, is evident. In my analysis of the Zuckerberg-Lacy interview, I suggested that this groupthink was exacerbated by the lack of diversity in the network participants as well as the high degree to which the members of the network were connected with each other. Because it was easy for messages to reach a high number of members of the network, along with the high level of connection between the network and other networks like the physical audience, opinions about the interview were quickly spread and reinforced throughout the network. In the #healthcare network, an opposite phenomenon is evident. Rather than there being too little diversity and too many connections within the network, it seems that there was too much diversity, and too few intra-network connections. Earlier I have explored the effects of these network features on resonance. Here I want to provide a few protocological reasons as to why the network displayed these attributes.

The first reason is the lack of persistence of conversations that I have already noted. While sustained interaction between individuals with different ideological viewpoints might have led to more intra-network connections, the way in which Twitter handled hashtags in @replies made such interaction difficult. This result was further exacerbated by the sheer size of the network. The #healthcare network generated thousands of messages a day and occasionally, during key events like the President's speech, thousands in a few hours. The sheer number of messages made it unlikely that any user could read them all in real time, much less respond to them in a thoughtful way. The size of the network and the lack of persistence of conversational topics made it difficult for any one message to reach a large number of network participants, leaving those participants with scattered and fragmented views of the network. Further, even though there was coordination between network participants and events like the President's speech, the lack of a shared physical experience of that event may have prevented the kind of reinforcement of opinions that are evident in the Zuckerberg-Lacy interview. It's one thing to see messages reinforcing a take on events on a network, and another to share a physical experience as part of a crowd. Even feedback that could have been witnessed by the entire network, such as the Joe Wilson outburst that was highly publicized during and after the speech, did not serve to reinforce one opinion in the #healthcare network, but rather replicated the ideological viewpoints of networks like #tcot and #p2. However, the lack of such interactions in this network, as well as its relative openness, resulted in less coordination between users particularly in their arriving at similar conclusions about the same events. The protocological constraints of the

network had a large effect on this result.

Because the protocol of the #healthcare network worked against the creation of intra-network connections, the program that emerged was one that privileged input over dialogue, thus making meaningful attempts at conversation unlikely. In short, this was a different kind of network from the previous two, one which, although it contained significant rhetorical activity, led to few of the rhetorical effects noted in the previous case studies. Rather than a conversation, what emerged was a kind of collective consciousness, a sampling of opinions about the health care reform process that appeared in real time, often in coordination with events external to the network. While this collective consciousness, may have beneficial features, it is clearly different from the traditional forms of sustained, engaged debate that are the goal of much rhetorical practice. The question remains as to how rhetoricians can address the unique features of networks like this one. However it is clear that once a program emerges in a network, it is incredibly difficult for that program to be dislodged or replaced.

To answer the question posed earlier in this section, it seems evident that the #healthcare network's tendency towards the results it displayed—little intra-network connections, few sustained conversations—is readily explainable via the processes of memory and delivery. Rather than attributing these features to a failure on the part of a speaker (for example, to remember) or a failed appeal, they are shown to be structural results of the processes of memory and delivery in digital networks. In the next chapter, I will explore some possible applications for this result in the field of rhetoric and composition.

Chapter 5

Conclusion: Implications for Theory and Practice

In my first chapter, I asked what memory and delivery would look like when communication is embodied on digital networks rather than in the physical body in the form of oral speech. At that time I suggested that the act of memorizing a speech for oral performance was a process of bringing the individual into coordination with a text, arguing that the processes that govern coordinating activities on digital networks were the under-theorized equivalent to memory on those networks. I indentified two of these processes: resonance, or the act of bringing two structures into coordination via the use of language, and switching, a network-specific act of making connections between networks. In the case of delivery, I argued that rhetoricians' interest in marshalling the physical body for effective argumentation is equivalent to the need to master the protocols of digital networks and the emergent programs that characterize their use. Just as the body limited the types of communication that could be delivered by a speaker, the rules, both technological and cultural, that govern the behavior of a network constrain the types of communication possible on that network. As a consequence, anyone who wishes to argue with, influence, or persuade the members of a network must do so from within the structure of that network's program.

While the word "program" is used by Castells (2000a) to suggest something like a determinative goal on the part of these networks, rather than individuals or technologies, I have argued that the program can be more productively viewed as an emergent property

of networks. As such, the program of a particular network can be seen as the product of unguided interactions between the parts of a network that, due to their complexity, lead inexorably to particular patterns of interaction in the network. The emergent nature of these programs makes them difficult to plan for or to predict beforehand, but it also makes them subject to alteration at the hands of skilled rhetor who is aware of them and able to address or counter them.

In chapters 2–4 I explored these concepts across three case studies, testing whether or not my construction of memory and delivery had any explanatory power when dealing with communication behaviors on digital networks. Each case study dealt with communication networks hosted on Twitter, but each was also unique enough so as to provide some differences by which my claims could be tested. While there are a number of rhetorical features of these cases that could be explored more thoroughly, I showed that memory and delivery were sufficient concepts for explaining some of the unique features of these cases.

The question remains as to what is the significance of this result. In the case study chapters I have hinted at how my analysis might provide rhetoricians with new areas to study or different emphases for instruction. In this chapter, I will explore some of these results, explaining the significance of these case studies for current rhetorical practice.

Rhetoric and the Embodiment of Communication

Body Versus Text

We can generally say that the introduction of Enlightenment views of abstract knowledge pushed to the side the focus that traditional rhetoric placed on the speaker and

his (it was almost always a male) body. For the study of rhetoric, this process began in earnest with the work of Peter Ramus, who, as Ong (2004) has convincingly argued, guided knowledge instruction away from what Ong calls the human lifeworld towards the abstract. Ong presents Ramism as a movement from the oral world of classical rhetoric to the visual world of the printed page, the effect of which was to encourage monologue rather than dialogue and remove individuals from the act of communication. As Ong puts it:

> This orientation is very profound and of a piece with the orientation of Ramism toward an object world (associated with visual perception) rather than toward a person world (associated with voice and auditory perception). In rhetoric, obviously someone had to speak, but in the characteristic outlook fostered by the Ramist rhetoric, the speaking is directed to a world where even persons respond only as objects—that is, say nothing back. (p. 287)

Ramus' visualist orientation, Ong notes, had the effect of subtracting rhetoric itself—or style, in Ramus' thinking—from communication: "Plain style, which is really nonrhetorical style, alone is acceptable to reasonable man" (p. 284). This "nonrhetorical" style was built on the model of vision, as Ong writes:

> the stylistic recommendations related to plainness, such as "perspicuity" in the sense of translucency, are formulated basically by analogy with visual apprehension and represent an attempt to reduce the process of communication in terms of such apprehension. The medium by which

> light is transmitted seems to act as though it were not there, whereas the medium of sound is felt rather as though it were acting to sustain and to give resonance to sound. (p. 284)

This final point is crucial: Ramist rhetoric looked to move knowledge from the realm of the "felt"—of touch, of bodies—to the ethereal realm of sight. Of course, sight, like sound, is an embodied experience, but what is important about this transformation is how it was perceived, and the medium by which sight is apprehended is treated "as though it were not there." The irony of Ramus's "object world" was that it served to completely efface these objects. While Ramus has harsh critics in rhetorical studies, his work merely builds on the division inherent in the hierarchy of the rhetorical canon. The higher canon was more important because it could be abstracted, theorized, and written down. This abstraction and theory was immediately applicable to many different communication mediums, suiting not only oral communication but also writing.

One of the primary results of Ramist rhetoric was a conception of knowledge as a thing that, crucially, is communicated in one direction, independently of people, via objects that were regarded as being effectively transparent, having no effect on the communication at hand. The movement away from embodiment was twofold, eliminating the physical presence of the speaker as well as that of the objects—most often, the printed book—that replaced the speaker. Baudrillard's "Requiem for the Media" (1981) addressed this trend, claiming that the primary effect of mass media is to eliminate the possibility of a response: in effect, to silence dialogue and replace it with monologue. Ong has repeatedly noted that abstraction and visual methods of organizing information

have many important uses, and both are key technologies in the development of many features of human culture, and even what we now regard as "humanity." This admission, along with the widespread adoption of digital technologies in many cultures, has challenged both Ong's description of media as mute objects and Baudrillard's contention that media opposes conversation. What remains from these injunctions is the need to specify the effects of particular media, a task that has been ongoing in the humanities and social sciences for many years.

Embodiment in Digital Networking

The networking and processing power made possible by the combination of personal computers and the internet have proved to be fascinating new tools for exploiting and extending individuals' cognitive apparatus. Realizing this fact, there is now an opening for rhetoricians to theorize a rhetoric that assumes the distributed nature of networked writing as its context. As cognitive scientists have demonstrated, cognitive tasks are largely performed through a combination of human cooperation and tool use (Hutchins, 1995). Having established this fact, it is necessary for rhetoricians to further investigate the fundamental communication tool of the contemporary age: digital networking.

Evaluating the role of embodiment in the age of computers, wireless connectivity, and perpetual digital duplication of information may seem a paradox to some. The proliferation of physical computing networks has seemed to subtract the human from communication, placing ever more emphasis on objects, even as these objects have become so ubiquitous and redundant that they themselves seem to disappear from the

consciousness of their users. Somehow this popular perception has persisted despite the decades-long investigation of the role that media and media technology plays in our communication practices (Darnton, 2002; Eisenstein, 1979; Johns, 1998; McLuhan, 2003), as well as our humanity (Bateson, 2000; Haraway, 1991; Hayles, 1999; Ong, 2004). Fields as diverse as anthropology and media theory have provided a bridge between the seeming dehumanization of communication via the spread of computing infrastructure and the classical assumption that the individual was an important locus of communication practice. By demonstrating the role that technology plays in human thinking, culture, and our sense of self, this theory has aptly demonstrated the continuing importance of the idea of embodiment—that physical structures, both organic and technological, affect communication, both in creation and consumption—for rhetorical practice in a digital age.

Syverson (1999) has persuasively demonstrated the extent to which writing is embodied, both online and off. Looking at diverse examples of composition—a twentieth-century poet, scholars using an email listserv, and a group of students collaborating on an assignment—Syverson shows how embodiment, which she defines as the situated nature of composition that is the direct result of human physicality, is present in each of these situations. Perhaps most startling at the time was her demonstration of the extent to which the email communications, a seemingly fundamentally ethereal medium, were embodied. Rather than being a disembodied forum of perfect communication, Syverson shows how the authors of these emails frequently and directly referenced bodily reactions to both the outside world and to the content of their posts.

The function of resonance and switching, protocol and program, in digital networks are analogous to the functions of memorizing and mastering the body and voice in oratory. However, while it is possible that one could speak of resonance, switching, protocol, and program outside of these contexts, it isn't clear that these processes would serve a similar purpose in communication not occurring on digital networks. That is, while what is traditionally called memory may take on the form of resonance on digital networks, memory may look completely different when the communication in question is embodied in some other medium. Rather than arguing that memory has become resonance and switching, full stop, I argue that the actions of coordination and making use of a communication technology's affordances are what rhetoricians should focus on when seeking to understand memory and delivery in other embodied contexts. As Ong sought to explain the embodied effects of print culture on knowledge, rhetoricians must always be alert to new uses of communication technology and how those technologies might alter our understandings of rhetorical practice that are grounded in a particular medium.

As Hayles (2002, pp. 29–30) has noted, the centuries-long dominance of print lulled many scholars into accepting the physical form of books and other printed material as a given, often failing to consider how this embodiment affects our understanding of the communication in that medium. Scholars are becoming more and more aware of the effects of material influences on communication practices. Rhetoricians need to be mindful of the extreme changes occurring in digital communication and be wary of applying theories of communication broadly to phenomena that are embodied in very

different ways. As these case studies have shown, it is possible to apply what appears to be even the most specific of traditional rhetorical principles to modern communication, as long as allowances are made for the embodiment of that specific technology in some new medial form.

The Canon Reconsidered

In this project, I have made a distinction between what I call the higher canon of rhetoric—invention, arrangement, and style—and the lower canon of memory and delivery. I acknowledge that this distinction has not always been a reality, nor has it been consistently recognized. For those who practice speech, memory and delivery remain key skills in their profession. Certainly Greek and Roman rhetoricians saw memory and delivery as important parts of persuasion and presenting ideas. Yet, as writing and print overshadowed oration as the primary means of communication in society, memory and delivery took a back seat to the higher canon. This distinction was exacerbated by the connection made between the parts of the higher canon and the mind. As Corbett (1990) has noted, the investigation of the topics of invention was, at least in part, seen as an investigation into the workings of the mind, the inner workings of which the topics were seen as reflecting (p. 95). When compared to the investigation of the abstract rules by which the mind operates, how could an interest in the modulation of the voice or theatrical gesture be considered with the same gravity or reverence? Not only this, but the inherent order of the canon—invention, followed by arrangement, style, memory, then delivery—itself played a role in emphasizing which parts of the canon were most important. The higher canon came first, and when print eventually took the role as the

primary means of communicating ideas, the abstract features of printed knowledge became more prized than the embodied expression of that knowledge. When the body could be taken for granted as the medium of communication, it was easy to create an approach to invention, arrangement, and style that capitalized on the body—and later, writing and print—as the primary medium for communication.

However, we now need to consider invention, arrangement, and style through the lens of medium. The investigation of what is possible in a medium—or, in the case of digital networks, what the protocol allows and what emergent programs enable—can be the prelude to invention or arrangement, viewed as the spark that ignites creative thought. Just as actors who are warming up begin with recognizing their physical forms and exploring movement and voice, the rhetorician can explore the embodiment of a medium for clues on how to proceed.

Arrangement and delivery. Consider the role of arrangement on Twitter. In the rhetorical canon, arrangement referred to the practice of ordering the elements of a text in the most effective manner. Due to the long dominance of speech as the as the primary means of communication, rhetoricians were able to treat arrangement in a very static way. This was possible because when speaking, the speaker has a great deal of control over the way in which his or her audience accesses information. Before the invention of recording equipment, there was only one way to consume spoken text: in the linear order in which it was spoken. Because speakers are in absolute control of the order in which information is consumed, they are under a great deal of pressure to provide their listeners with an effective and easily manageable way of processing that information. As a result,

the typical arrangement pattern recommended by Cicero and adopted by other classical rhetoricians—"say something before addressing the case, then set forth the case, after that prove it by establishing our own arguments and refuting those of our opponents, then conclude the speech" (De Oratore 2.307)—was for many years one of the primary means of organizing oral communication in western culture. While this was hardly the only way in which to organize a speech, it was one of the most widely adhered to by Euro-centric rhetoricians, who used this rigid, temporal structure to ensure efficiency and clarity in communication.

Writing, and later printed texts, eliminated the temporal dominance of speech in communication, and, consequently, the need for the presenter to be in absolute control of the flow of information. Printed texts gave readers a measure of control in that they could reread difficult portions of a text or set a text down and return to it later. While authors still had control over a text's arrangement—the standard for books and other printed materials is for them to have a sequential order—they were no longer in charge of the way a reader consumed the text. The sequential order of a book is no guarantee that it will be read straight through from page one to page *n*. Rather, the arrangement of a book suggests a path that the reader can follow. Many of the major developments in fiction in the twentieth century—stream-of-consciousness, postmodern game-playing, hypertext fiction—attempted to incorporate in writing the reality that there is no single path through a text by offering multiple ways of interacting with textual products.

Digital texts, particularly those accessed on the Internet, disturb both the temporal arrangement that is the hallmark of oral speech and the spatial arrangement of print. With

digital texts readers have much greater control over the order in which they consume texts as well as over the formatting and display of those texts, such as by creating custom style sheets. Twitter allows a certain kind of temporal arrangement, similar to oral speech. New tweets are added in a temporal sequence to your personal Twitter page, as well as to your follower's pages. However, like a printed text, readers can read those tweets in whatever order they choose, and it is likely that that order will be reverse-chronological because this is the form of presentation favored by Twitter's protocol. An arrangement pattern like that presented by Cicero—or one that is more common to print-based texts—simply isn't possible in a Twitter stream, unless it is presented in an abbreviated form in a single, 140-character message.

The arrangement pattern advocated by Cicero of introduction, exposition, presentation of evidence, and conclusion was designed for the context of oral speech and doesn't necessarily apply to Twitter. The arrangement pattern of oral speech was designed to address the affordances of oral communication; as I outlined above, the particular communication needs of audiences drove the creation of this pattern. As with the case of oral speech, patterns of arrangement must be tailored to the specific affordances of Twitter. While it is not yet clear what this pattern (or what these patterns) might be, it is clear that they will need to address the particular needs of digital networks, and the particular protocols of those networks.

This realization suggests that the traditional ordering of the canon—invention, arrangement, style, memory, and delivery—might be reconsidered as rhetoricians address the particular, embodied constraints of unique communication mediums. In doing so,

rhetoric would elevate the practices of delivery outlined here to a more prominent place in the canon. Rather than being concerned with the mere presentation of information that has been effectively arranged, delivery must determine the affordances of a medium in order to properly utilize that medium. Just as oral arrangement was itself addressed to the needs of oral speakers and audiences, digital network arrangement must address the affordances, in the form of protocol and program, of those networks.

Memory and invention. A similar situation entails with memory. If resonance and switching are part of the act of memory, as I have argued, we have to think of memory as a crucial part of the generation of topic-driven digital networks, working hand-in-hand with, or prior to, invention. As we saw in the case of the Zuckerberg-Lacy interview and the #healthcare network, the generation of new material in those networks—new topics of discussion, responses to other's posts—was highly dependent upon resonance with outside networks and switching between networks. If the audience members at the Zuckerberg-Lacy interview had not been able to connect with Twitter or with each other, there may likely have been a different outcome at that event. On the #healthcare network, external events driving news about the topic—such as the President's speech on health care reform—led to an increased amount of messages being sent to the network, thus fueling its continued development. If networks like the #healthcare network are dependent on perturbances and resonance for their continuation, then these behaviors must be considered essential to those networks. While invention is still important at the level of the individual message, acts of coordination are far more important phenomena at the level of the network. Even in the first case study, effective switching between

Culberson's Twitter network and other networks, such as the national news media and the blogosphere, influenced the topics of discussion that characterized that network. Rather than a process that occurs after they have been initiated, these processes are necessary for the creation and continuation of such networks.

In other words, if the processes of resonance and switching have such a major influence on the topics that are addressed in a rhetorical event, this indicates that the coordination processes of memory are more important to invention than had been previously acknowledged. Topics or topoi have traditionally been considered part of invention, and the choice and manner of addressing those topics have been seen as one of the primary functions of this part of the canon. However, if we recognize that in digital networks the choice of these topics isn't determined by a single author, but rather they emerge from a network as it resonates with other networks or makes connections with these networks through switching, then it becomes clear that if a rhetor wishes to have some control over these topics or desires to be effective in addressing them, she must have an understanding of how resonance can affect a particular communication network and proactively attempt to make connections between that network and other networks that would support her claim. While it is not necessary to agree with Culberson's claims, his attempts to make connections between his network and outside sources such as news reports and favorable blog posts is an example of this process. Culberson's use of these sources was inventional: an attempt to generate meaning and support his claims via switching processes that he presumably hoped would resonate with his followers. Of course, the sometimes questionable claims that he attached to this switching behavior

were not admirable. Yet, the problems his audience had in resonating with these claims merely indicate that these were failed attempts to generate topics of discussion in this way. One could easily imagine situations where switching based on stronger, more defensible arguments would lead to effective persuasion in a digital network.

In short, the results of this study suggest that memory and delivery exist in a much more complicated, symbiotic relationship with the other parts of the canon than has been traditionally acknowledged in the case of traditional written communication. As such, it is important for rhetorical practitioners and theorists who are working with new technologies to address memory and delivery as part of the ongoing creative process.

Audience

Modeling and audience. For a speaker in front of a crowd, the audience isn't an abstract concept to be imagined, but rather a living entity that provides real-time feedback. The creation of writing forever altered the dynamic relationship between the writer and the audience. Of course, this issue is partly replicated for the speaker in that the audience isn't present when the speaker composes a speech; that's why rhetoricians have found it necessary to generate conceptual models of individuals—for example, Aristotle's descriptions of old and young men (Rhetoric 2.12–13)—that they can address. These models have traditionally focused on what we now call psychology: the modeling of the human psyche.

There is certainly still a need for understanding individuals and their motivations in rhetorical studies. Audiences are still composed of individuals, and those individuals frequently share certain traits—if only by reason of their self-selection as members of a

particular audience—that an author should address in her communication. Indeed, the case studies in this project have shown that even surprisingly open networks can rally around a common cause or common interest and act with surprisingly cohesion. However, the individual is not the only external structure the author has to address. I say external structure, because audience is a term that no longer captures the situation facing the rhetorician. It has been millennia since the audience addressed by rhetors regularly consisted of a limited, more or less homogenous, group of people in a single point in time and space or cultural setting. Writing forever altered that historical situation. Now texts are distributed in multiple media to both individuals and groups distributed in space and time, across continents and cultures, perhaps in perpetuity. In such a situation, what useful purpose can the term 'audience' serve? At best, one could speak of audience*s*, but, again, the multiplication of audiences creates a bewildering array of groups that must be considered, and the audience structure is not best served by the use of this traditional term.

Perhaps more seriously, rhetoricians' attempts to cling to this terminology ignores (or, more charitably, takes for granted) the key features that make it so unwieldy: multiple media and means of distribution, as well as the technologies facilitating individual and group access to texts. I must reiterate that the individual psyche is without question still relevant to the speaker, since texts are (for the most part) still read only by individuals. However, because individual and group cognition, communication, and even self-worth are inextricably connected to both the tools that allow for communication as well as the media in which that communication is manifested, no exploration of the

individual psyche is complete without a consideration of them. As such, the audience is only part of what we are concerned with in an act of communication and this partial construction needs to be augmented with additional information.

Suppose that, instead of an audience or audiences, we said that texts address networks? This was certainly the case during the Zuckerberg-Lacy interview, where the network of Twitter users was piqued that the speakers didn't address them. An attempt to meet the needs of that network, via resonance or an understanding of the program that emerged during the interview, would have been an extremely effective intervention for dealing with that network's unrest. These networks would undoubtedly consist of individuals, but also the technical apparatus used to upload and download communications, the media in which the text is instantiated, as well as the social forces that play upon each. Just as Aristotle imagined the psychology of old and young men, now authors need to imagine the structure of the network.

One could argue that these networks I am describing are in fact merely a species of audience, albeit audiences with unique features. Additionally, it could be argued that audiences of any kind are themselves merely a form of network, so that replacing the term "audience" with "network" is simply a form of bait-and-switch, where a newer term with no significant difference is used to replace an older one. However, while I would grant that digital networks are a species of audience and that pre-digital age audiences could themselves be considered a type of network, describing these structures as networks, particularly digital networks, does provide rhetoricians with a benefit. Namely, it allows rhetoricians to address the features of these networks that are most open to

intervention on the part of the rhetor. These features are the processes of resonance and switching, and the constraints of protocol and program. In its time, Aristotle's approach to the psychology of audience members was quite effective, perhaps even revolutionary, allowing for the generalization of abstract traits that enabled speakers to tailor their arguments to the needs—or expectations—of a particular group. With the emergence of the network form as a dominant mode of social organization, it is necessary for rhetoricians to begin to address the unique features of networks when they appeal to audiences that are organized in networks.

Consider the example of the health care reform bill that passed through Congress in 2009. As noted in the previous case study, the reform process was met with considerable opposition. While there was some debate as to the origins of this opposition, it was clear that many citizens were mobilized against the bill. But what, exactly, was the thing that the protestors were opposed to? There was no single bill until very late in the process; instead, there were a number of draft bills that were being shepherded through separate committees in both houses of Congress, bills that had significant differences ("Health Care Reform," 2010). Spinuzzi (2009) has argued that the health care protests, particularly the rancorous health care town hall meetings held by members of Congress during the summer recess in 2009, were united in opposition rather than by a common cause. Drawing on Castells, Spinuzzi points out that in netwar "individuals and groups had a common tactical goal, but not a common ideological or strategic objective" (Spinuzzi, 2009). In other words, the individuals at the health care town halls were united not by a common ideological background, but by a common enemy, and they used the

tools of digital networking—the internet, mobile device—to create loose coalitions opposed to health care reform. Rather than indicating that this behavior was somehow new, Spinuzzi notes that it was similar to the opposition to Social Security reform that met Congress at the beginning of President Bush's second term in office, and the entire behavior is, in general, predicted by Castells.

The existence of these netwar-like protests in 2005 certainly did not go unnoticed in political strategy circles. One of the unique features of the Obama administration's attempt to overhaul health care was his long refusal to outline a health care bill of his own, as the Clinton administration had done when they tried to pass health care reform in the 1990s. Instead, the Obama administration identified problems with the U.S. health care system and left the details of the bills up to congress. This behavior was long criticized, and the President eventually outlined the features of a bill he would like to see in the speech that is the centerpiece of the #healthcare case study. Yet, before that point, Obama had the freedom to advocate reform while not endorsing any particular method of reform. One casualty of this process was the "public option," a proposal for a government-funded health care plan that all citizens could join, a kind of Medicare for everyone. This public option drew sharp criticism both in Congress and from certain sectors of the public, and this reaction led to its eventual exclusion from the final bill. However, rather than identify with particular proposals such as the public option (or the infamous "death panels"), the President identified with the process, vetting individual proposals in the public arena.

Which brings us back to audience. Faced with a diffuse opposition, some

members of which were simply opposed to the idea of reform in general, could we say that the Obama administration provided a networked response to their networked opposition? In other words, the administration presented its case in the form of many nodes that were impervious to attack from individual arguments? Rather than proposing a bill early in the process that could have been nitpicked and altered in the way the various bills in the House and Senate were, and thereby suffering the indignity of having "their bill" publicly dismantled, the administration allowed the process to go forward in a fashion similar to crowdsourcing. Obama espoused a goal, but allowed the procedure to develop in response to particular needs in Congress via alliances built on individual actors in the face of varying levels of public opposition. When particular features of particular bills proved controversial, the President could rightfully distance himself from it because he didn't author it.

Rather than present a single target for the opposition to attack, the Obama administration mobilized a decentered network, embodied in the congressional attempts to create a bill, which would resist attack. There could be no opposition to "Obama's bill" because Obama had no bill until very late in the process. Although there was massive opposition to "Obamacare," the primary focus of this opposition was the process and specific provisions of the possible bills, and even though the opposition succeeded in eliminating some provisions, they failed to halt the process. Faced by a networked opposition, the administration provided a networked response, and, if judged by the passage of reform, that response was successful. While there were certainly attempts to respond to the attacks of particular groups, such as over the "death panels," the overall

strategy of the administration was not to appeal to the shifting ideological alliances that it faced, but to use the logic of networks to generate a bill that would be successful in the fractured Congress. If networks have truly replaced hierarchies as the primary means of social organization, hierarchical attempts to address audiences won't go away, but will be supplemented, perhaps even become subordinate to, network strategies for persuasion and argument, such as the one used by the Obama administration during the health care reform process.

Implications for Rhetorical Practice

As I explained in my introduction, ancient rhetoricians approached memory and delivery as being essentially untheorizable, although manuals for teaching memory (Carruthers, 2008) and delivery (Austin, 1806) appeared in later times. Rather, ancient rhetoricians approached these two embodied parts of the canon as skills that had to be learned through good teaching, an embodied practice absorbed through observing and imitating a master practitioner. One of the reasons that memory and delivery fell out of favor with writers, and some theorists, is that it lacked this strong grounding in abstract knowledge. In this section I want to suggest some ways in which memory and delivery can be reintroduced to the teaching of rhetoric and composition as embodied practices. As I have claimed before, the embodied features of digital networks will not necessarily explain the coordination processes and particular constraints of forms of communication embodied in different ways. Rather, I argue that what will persist across media as we investigate memory and delivery will be the effects of coordination and the restraints of the medium.

Memory

One of the results of the popularization of computers in society has been an increase in the amount of publicly available writing by individuals who would not ordinarily consider themselves writers. As the amount of public writing increases, it is increasingly necessary for writers to be able to connect with readers, whether those readers take the form of networks or some other structure. While conversation is as old as speech and incidental writing has been common throughout the history of literacy—and, since the development of print, there has been a strong history of non-professional writing like pamphleteering in the western world—the widespread reach of the always-on internet and, increasingly, mobile computing has led to an explosion in the writing that ordinary people do for a public audience. While technologies like email enhanced and altered letter-writing skills, social networking sites, blogs, and chat rooms have taken the kinds of incidental writing and conversational habits that were previously personal or ephemeral and have both publicized them and given them some measure of permanence.

Lanham (2006) has argued that the problem of scarcity of attention—a cultural problem with a long pedigree that has been exacerbated by networked culture—is the defining feature of modern society. According to Lanham, the fundamental nature of (online, connected) economies has shifted from focusing on the scarcity of "stuff," or manufacturing and physical commodities, to focusing on the scarcity of human attention. Barraged by numerous points of information, individuals only have so much time in which they can pay attention to that information. Therefore, information that wants to be noticed must make an effective use of style, and this style will result in the individual or

work receiving the attention that is the currency of modern economies. As the rise in public authorship continues, these guidelines would seem to be exactly what is needed for authors hoping to get their work noticed. However, I believe the rhetorical feature that Lanham is identifying is not style—or not only style—but rather the coordination features that I have identified with memory.

Lanham identifies two major examples of what he calls "attention economists": Andy Warhol and the artist duo Christo and Jeanne-Claude (Lanham, 2006, p. 48 ff.). These artists, Lanham argues, dealt primarily in attention. In Warhol's case, that attention took the form of utilizing the structure of the art world—galleries and museums, art critics and watchers—to acquire fame for himself. Here is how Lanham describes this process in the case of Duchamp's famous *Fountain*, a urinal he submitted to an art show hung upside down:

> Inquiry of all sorts has to be serious. That is its organizing premise. But if you subtract the object of that seriousness by putting a urinal in its place, that seriousness is turned into a game. To understand it, you must then write a serious treatise on games and play, wondering all the while what you are about. The critic, like a bull bemused by the toreador's flashing cape, starts pawing the ground, angry and confused. Such confusion has made Duchamp famous. The urinal proved to be an extraordinarily efficient generator of fame because other people—the critics and historians—did all of Duchamp's work for him. (p. 44)

In other words, by subtracting seriousness from his art, as Duchamp did, Warhol was able

to generate a tremendous amount of attention for that art as others such as art critics, strove to provide a serious explanation for the art. In describing the work of Christo and Jeanne-Claude, Lanham attributes to them much the same process, granting them, however, a more serious intent: that of attempting to make their audience think about the process of art and permanence, rather than merely attracting fame or money. Instead of subverting existing art structures by subtracting their seriousness, Christo and Jeanne-Claude focused their work—like the wrapping of the Pont Neuf in fabric for a short period of time—on the questions of impermanence and beauty. By limiting the time in which their works were available, and by completely financing those works on their own, the artists subverted the traditional economies of art, where an object is created to be sold, replacing it with something quite different: the process of attention being directed at a thing of beauty.

In looking at these examples, the question is: are they examples of effective use of style, or something else? While the works of Warhol and Christo and Jeanne-Claude are certainly stylized, this stylization is, in Lanham's retelling, not the primary reason why their work became important. Rather, he argues that they became important because of the ways each interacted with the existing structure of the art-cultural society. Can such behavior be strictly thought of as style, at least in the sense style has been used in the history of rhetoric? To help answer this question, I would like to draw the reader's attention to a similar example: Culberson's claim that the Democratic leadership in Congress was censoring him. As I demonstrated in chapter 2, Culberson didn't invent this claim. It was first produced by the office of House Republican Leader John Boehner

(Boehner, 2008). However, Culberson was able to generate the most attention for this claim, eventually becoming the primary voice for those wishing to promote it in public forums. Like Warhol and Christo and Jeanne-Claude, Culberson did this by effectively leveraging the attention of a community—a network—that took it very seriously and worked on his behalf to condemn it. While some in that community eventually became skeptical of the claim, even the attention they provided for it helped to promote it in public, and to promote Culberson as its primary sponsor. As I have shown, this promotion was largely accomplished through the processes of switching and resonance. The coordination with other structures like the professional media and outside interest groups were the primary means by which Culberson was able to generate attention for his claim. But this attention was generated in absence of the kind of eye-catching, thought-provoking style that Lanham argues for, the style that can command eyeballs in an attention economy. Culberson's tweets, and even his longer appearances in other media, such as video and print interviews, do not display wit or a stylization of language that could be the counterpart of the artistic style of Warhol or Christo and Jeanne-Claude's work. This lack of style in an instance that generated a high degree of attention in a crowded information marketplace suggests that it is not style alone that generates attention in an attention economy. Rather it is the coordination actions of memory, resonance and switching, whereby individuals and networks are able to make connections between their works and other cultural structures, which plays the dominant role in an attention economy.

In this case, it is perhaps better for rhetoricians to turn from a focus on style and

seriousness—though neither should be abandoned—to one on the uses of coordination and the primary danger associated with it: groupthink. As we have seen with the case studies, one way of generating attention is by finding and connecting with communities of like-minded individuals—all coordination must at some level be built on commonality. Consider the example of #tcot or #p2: these networks are built around the shared ideologies of their members, and for this reason they are good points of contact for others who wish to share information that might appeal to those members. As we saw in the #healthcare network, it is also a place where those who wish to challenge members of the community to conversations or debate. However, it is not clear that attempts at these conversations are fruitful, or even elicit responses in most cases.

While it can seem a relatively simple task to create networks around shared goals or interests, it is also the case that these groups, if they are too similar, can suffer from so few or ineffectual outside challenges or inputs of new ideas that they fall prey to groupthink. In these case studies we have found three conditions for groupthink: lack of group diversity, appeals to authority or access, and failure to acknowledge alternative views. In the case of the Zuckerberg-Lacy interview, the economically and technologically homogenous audience at SXSW led to the groupthink behaviors emergent in the Twitter network and physical audience. In the second case, an appeal to the authority of Culberson—as an insider, as an elected official—was sufficient reason for a large group of his followers to completely accept his claims about the alleged censorship, and, with some exceptions, this acceptance was not dislodged until a new authority—the Capuano letter—provided a convincing alternative to his claims. In all

cases, when the program of the network involved emerges such that it fails to acknowledge alternative views, such as with the early reservations about Culberson's censorship claim, the extreme reactions to Lacy, or the failure in conversation and interaction between participants in the #healthcare network, the lack of acknowledgement or engagement with alternative viewpoints was a crucial factor in the ultimate behavior of those networks. In Culberson's case, he eventually acknowledged these views and moderated his position, while the Zuckerberg-Lacy networked only did so after the fact, and the #healthcare network not at all.

In general, we can say that for healthy coordination, it is necessary for there to be a diversity of opinion. Returning to Luhmann (1989), we see that resonance can't occur in situations where there are no structures for mediating communicating between to groups or networks. In other words, if some feature of my structure prevents me from acknowledging another structure, then I can't interact with it. I can't see what I can't see. To increase the possibility of coordination or resonance, it is necessary for structures to seek out diverse inputs of information. In some cases, that would be the pursuit of diversity of ideas. In others, it might be the active pursuit of diverse nodes that can be included in the network, thereby increasing the number of possible structures with which the network can coordinate. Of course, in cases like the #healthcare network, even diversity of opinion can fail to lead to effective resonance if there are structural impediments that prevent connections between node in the network. Such impediments can be overcome if users constantly seek to check ideas against outside standards, not those internal to the network, and actively pursue inter-network connections. In

technological terms, this process could be seen as an extension of the checksum, the verification of digital messages by comparing their size after they have been transmitted over a network. One goal for rhetorical use is to proactively seek out these frames and either challenge them or seek to align with them so as to make acceptable arguments.

Delivery

Delivery in digital environments sails between the Scylla and Charybdis of over-analysis on the one hand, and lack of contemplation on the other. In other words, we cannot set aside the instructive power of performing communication until we completely understand a medium; however, neither can we abandon the thoughtful and restrained study of that medium and its proper use. This is especially difficult in the realm of digital media, where the pace of innovation is so fast that it is sometimes difficult to thoughtfully examine new communication tools before they are upon us. As I have argued in the case studies, the protocols of particular networks have a significant effect on the communication of those networks. On the one hand, we cannot refuse to participate in a communication medium until its restraints—its protocols, if you will—are completely understood. However, neither can rhetoricians engage blindly with new forms of communication without considering the restraints and affordances that that form of communication will have on their texts. One goal of rhetorical studies in new communication environments should be the examination of these restraints and the best practices of users in these environments. While there will be some broad commonalities between the rules of delivery across media, by virtue of their unique embodiment, different media will have unique restraints and one of the primary challenges rhetorical

practitioners will encounter in the face of emerging media will be negotiating these new embodiments. The question remains as to how we will do so.

Cyborgs. One place to begin is with the feature that all verbal communication has in common: language. As Haraway (1991) has argued, language has a role in shaping not just our identities, but our selves, and the combination of language with the individual doesn't merely represent a kind of tool use, but rather a new organism, a cyborg, created through the combination of the two. Just as the physical features of writing technologies like print changed the way that authors thought about their work and knowledge in general (Ong, 1991), the way in which networks embody information—particularly how they combine a sense of instantaneous communication with a historical record of messages—alters both users' expectations about how information can (and should) be used, as well as the specific argumentative techniques that they deploy.

In her "Cyborg Manifesto" (1991), Haraway defines the cyborg as "a hybrid of machine and organism, a creature of social reality as well as a creature of fiction" (p. 516). Of course, she writes, "modern medicine is…full of cyborgs, of couplings between organism and machine" (p. 516), yet machines aren't the only technologies on which we depend; humanity relies on tools beyond the merely physical. Society is a machine, as is language, and Haraway uses the cyborg as a metaphor for understanding the two, arguing that theorists must take into account the degree to which our humanity is a product of physical and social tools. According to Haraway, language has played a crucial role in the process by which

> late twentieth-century machines have made thoroughly ambiguous the

> difference between natural and artificial, mind and body, self-developing and externally designed, and many other distinctions that used to apply to organisms and machines. (p. 518)

One particular way in which we can see this connection between language, machine, and body is the trend in the sciences to convert the physical world into text. Haraway notes that "biology and evolutionary theory over the last two centuries have simultaneously produced modern organisms as objects of knowledge" (p. 517) and that the technologies of communication and biological manipulation "are the crucial tools recrafting our bodies," for "communications sciences and modern biologies are constructed by a common move—the translation of the world into a problem of coding" (p. 524). The code—or text—is the technology being used to bridge the gap between our physical selves and the world of information in which those selves are "objects of knowledge." In other words, not only are we literally colonizing our bodies with machines, we compose them as texts as well, thereby rendering them ever more susceptible to refashioning through language. One instance of this refashioning is what Greenfield (2006) calls "everyware," an always on, ambient computing infrastructure that is enacted via networks of ubiquitous data processing and collection, the implicit goal of which is the bridging of the divide between the physical world and digital one, or as he puts it, between "atoms and bits."

In short, language is a tool, and like all tools, it is implicated in who we are, becoming a part of ourselves. This process has been greatly facilitated by networking technologies, which have increased the amount of data produced by individuals and

provided the computing power necessary for making sense of this data and bringing us closer to the marriage of atoms and bits. And language is the common feature uniting all communications technologies. This being the case, a continued focus on the embodied features of language, particularly on the ways in which language facilitates the combination of flesh and technology in cyborg futures, should be a fruitful are of research for rhetoricians in the coming years.

The Exploit and Network Sophistry

Galloway and Thacker (2007) argue that the primary means of effecting change in networks is through the exploit. As they explain

> Protocological struggles do not center around changing existent technologies but instead involve discovering holes in existent technologies and projecting potential change through those holes. Hackers call these holes "exploits." (p. 81)

They go on to claim

> The goal for political resistance in life networks, then, should be the discovery of exploits—or rather, the reverse heuristic is better: look for traces of exploits, and you will find political practices. (p. 82)

In other words, the means by which individuals and networks interact with the protocol of networks is through exploits, a term that hackers have used to describe holes or errors in code that, when taken advantage of, allow for non-planned uses of the network. When we consider the network as an abstract concept, that is, when we describe cultural structures as networks, as Galloway and Thacker do, then the exploit becomes the means

by which users can direct the power of the network against itself. The example I have given of the health care town halls can be described as a kind of exploit, turning the process of community feedback for legislators into a forum for opposition to that legislation and, in some cases, the entire legislative process.

The practice of rhetoric is not a fixed set of behaviors. Rather, it is a contingent on many factors, one of which is the medium in which the communication occurs. Rhetoric on digital networks doesn't follow ideal forms of rhetorical practice, but is dependent upon network logics and is, essentially, a networked rhetoric.

While Galloway and Thacker were primarily concerned with political action in network structures, I do not think it is too much of a stretch to extend their notion of the exploit to other forms of intervention in networks. Specifically, I argue that a successful rhetorical performance is itself an exploit in the case of networks. As I have demonstrated in this project, memory and delivery are both subject to network logics when communication is embodied on digital networks. In the language space of digital networks, the exploit is often the successful rhetorical performance. In short, it is a use of the network that is not restrained by the network's protocol, but rather takes advantage of that protocol in order to achieve a rhetorical end.

Castells (2004) argues that the means of combating network power is through counter-power. However, counter-power works through the same mechanism as power: the network. For this reason, counter-power either operates via reprogramming networks, blocking the switches that connect networks (2004, pp. 34–35), or creating new networks at odds with power. The idea of the exploit can be a fruitful one in this context. While the

creation of counter-networks that are at odds with a particular network's program is often possible —as was the case in the blogs that sprung up in the wake of the Zuckerberg-Lacy interview that challenged the conclusions of the Twitter network—thinking of rhetorical exchange as an exploit of a network's protocol provides rhetoricians with an even stronger tool in dealing with networked communication. Without having to reinvent a network from the outside, rhetoricians can make challenges to networked power from the inside, by exploiting the protocols that govern those networks. One risk associated with rhetoricians embracing this move would be charges of sophism. The idea of exploiting networks is borrowed from hackers, and as such it carries with it negative connotations of attacking authority and using someone else's resources for personal gain. It isn't difficult to see how such language could be interpreted as a network sophism, the use of networks for whatever means necessary without regard for morals or ethics. However, as with the sophists, these charges, if made, could be countered by both acknowledging the fundamental nature of networks and inculcating students with training in properly and ethically using networks. While network sophistry might be an unappealing term for some, for rhetoricians to fully understand the nature of digital networks, we must embrace the idea of the exploit in networked writing.

Appendix A

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